Paper TRADE JOURNAL

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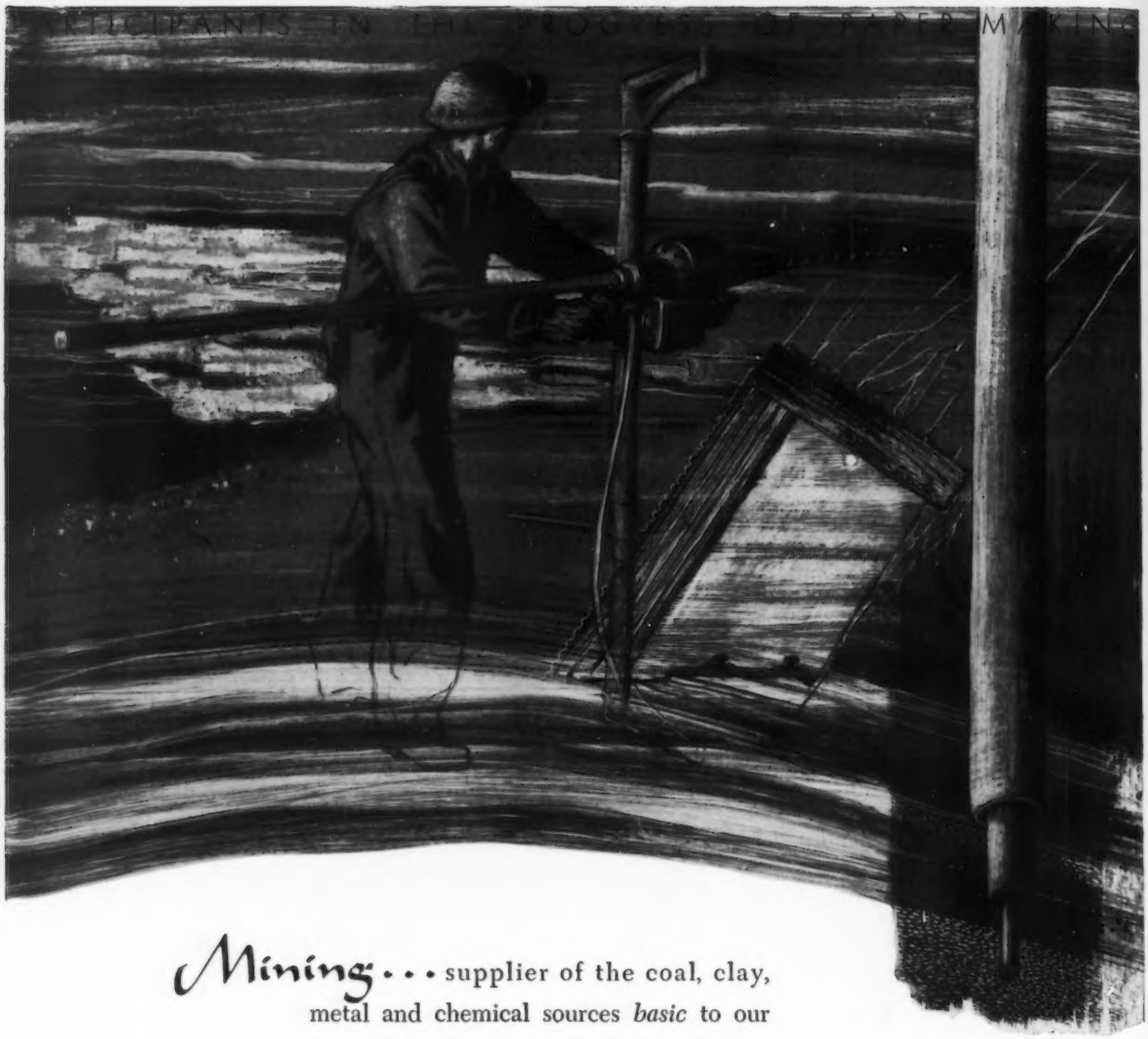

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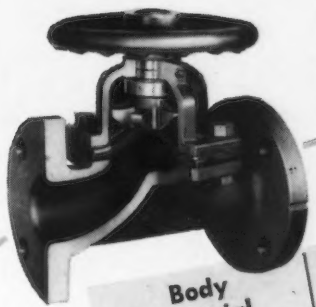
5 Pulp Mill	Paper Stock		
6 General Service	Compressed Air		



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Paper TRADE JOURNAL

VOL. 135—No. 9 AUGUST 29, 1952

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NEXT WEEK

Not since Multistage bleaching was introduced and accepted by the industry, has a development meant so much to the pulp industry as Dioxide bleaching. In the years to come, this new reagent will assume an increasingly greater use for the production of strong chemical pulps. You cannot afford to miss this article by an outstanding authority—F. Casciani, Director of Research of Niagara Alkali Co.

REMEMBER THESE DATES

SEPT. 10-12: TAPPI, Testing Conference, Marshall and Bray Halls, College of Forestry, State University of New York, Syracuse, N. Y.

SEPT. 11-13: American Institute of Chemical Engineers, National Meeting, Palmer House, Chicago, Ill.

SEPT. 18-20: New York-Canadian Div. of the American Pulp and Paper Mill Superintendents Assn., Saranac Inn, Upper Saranac Lake, N. Y.

SEPT. 18-21: Northeastern Div., of the American Pulp and Paper Mill Superintendents Assn., Poland Spring House, Poland Spring, Maine.

SEPT. 25-27: Pacific Coast Div., of the American Pulp and Paper Mill Superintendents Assn., Joint Meeting with Pacific Coast Section of TAPPI, Pacific Coast Branch, Technical Section C.P.P.A., Empress Hotel, Victoria, B. C., Canada.

SEPT. 26-27: Pennsylvania-New Jersey-Delaware Div. of American Pulp and Paper Mill Superintendents Assn., Fall Meeting, Galen Hall Hotel, Wernersville, Berks County, Pa.

OCT. 8-10: The Southern and Southeastern Divisions of the American Pulp and Paper Mill Superintendents Assn., Joint Meeting, Hotel Roanoke, Roanoke, Va.

OCT. 11: Connecticut Valley Div. of American Pulp and Paper Mill Superintendents Assn., Fall Meeting, Berkshire Inn, Great Barrington, Mass.

OCT. 13-16: 7th Engineering Conference of the Pulp and Paper Industry, Morrison Hotel, Chicago, Ill.

OCT. 20-24: 40th National Safety Congress and Exposition, at Conrad Hilton, Congress, Morrison and Sheraton Hotels.

OCT. 27-28: Ninth Fibrous Agricultural Residues Conference, Northern Regional Research Laboratory, Peoria, Ill.

NOV. 5-6: TAPPI Plastics Conference, Marshall Hall, College of Forestry, State University of New York.

NOV. 12-14: Alkaline Pulping Conference, Technical Assn. of the Pulp and Paper Industry, Battle House, Mobile, Ala.

NOV. 20-21: TAPPI Corrugated Container Conference, Schroeder Hotel, Milwaukee, Wis.

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All roads lead to Hamilton, Ohio

Once upon a time "all roads led to Rome" for there was centered all responsibility for the government of The Roman Empire.

Today, in the better judgment of many a paper maker, all roads lead to Hamilton, Ohio, where "everything for the paper mill" can be obtained through The Black-Clawson organization.

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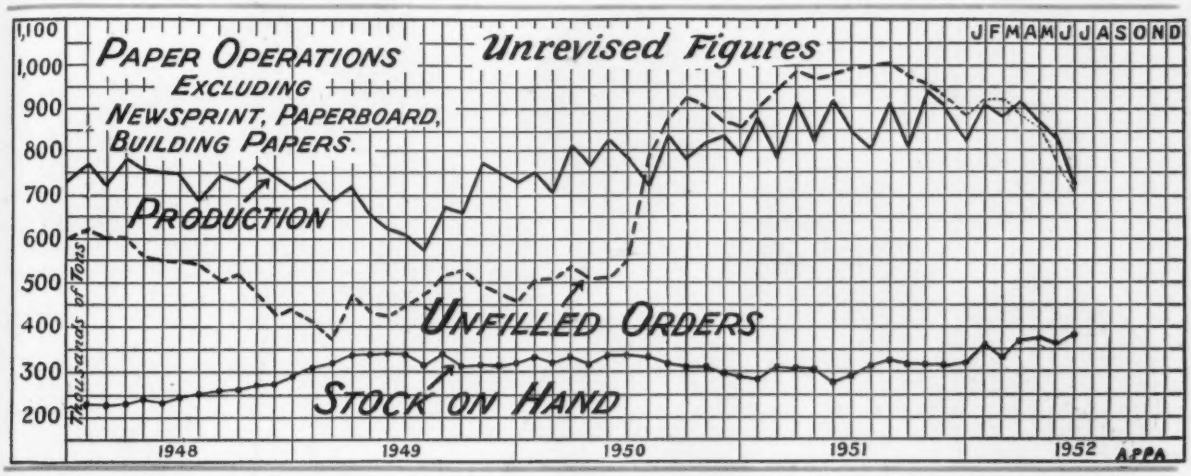
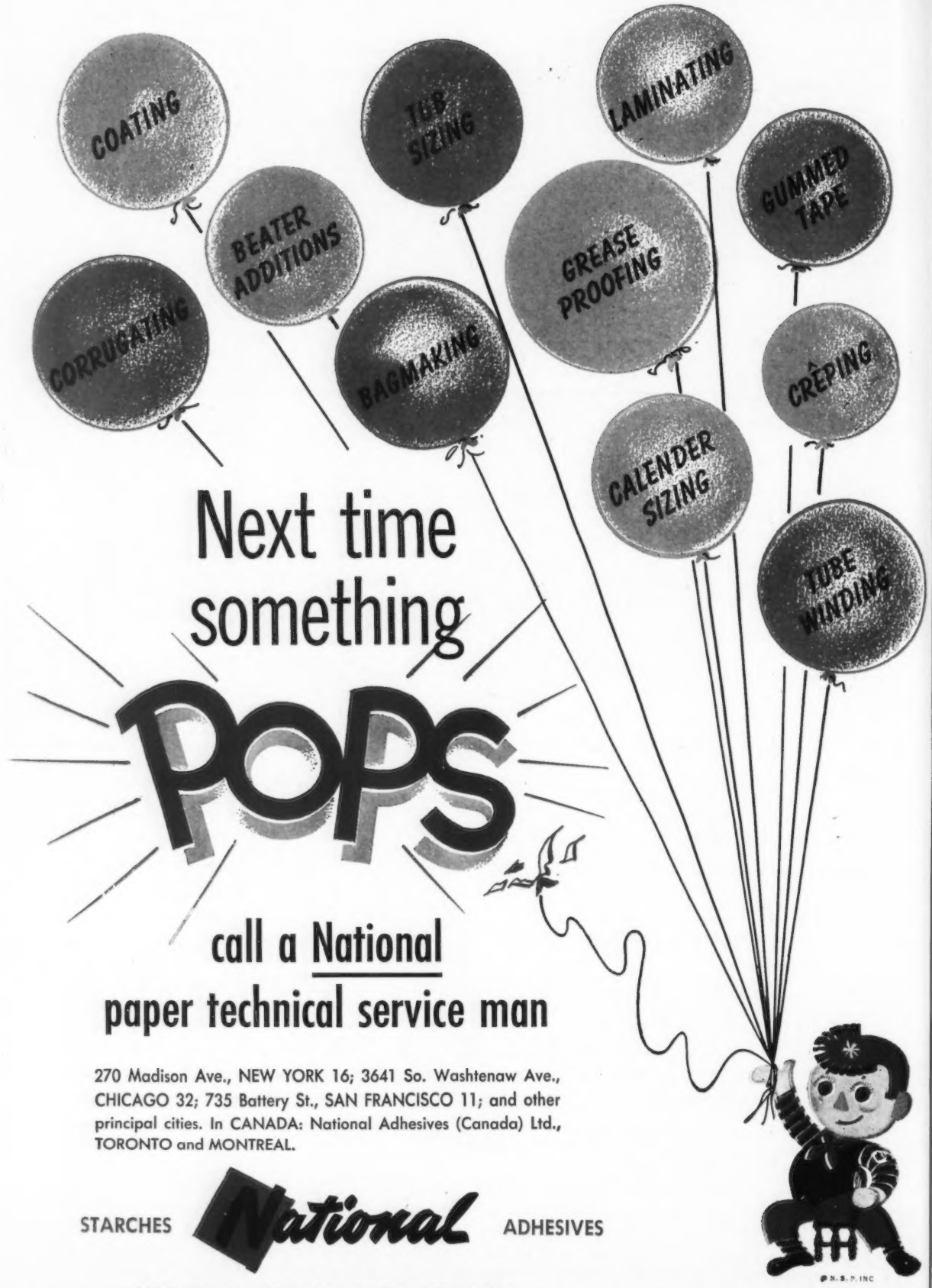


Brief of Important Figures

Source	Production	WEEK ENDING Aug. 16, '52	July 19,'52	Aug. 18, '51
APPA	Paper Production Percent Capacity[3]	86.9	86.6	97.1
	Unbl. Kraft Paper Production Percent	80.5	75.4	94.2
NPA	Paperboard Operating Ratio Percent Inch Hours	89	80	93
APPA	Paper Production* (Except Newsprint and Building Papers) Tons	June 1952 738,000	May 1952x 816,627	June 1951 909,757
	New Orders Tons	703,000	740,159	886,155
	Unfilled Orders Tons	708,806	747,316	988,500
	Shipments Tons	729,000	802,675	901,561
NPA	Paperboard Production Tons	July 1952[2] 871,552	June 1952 804,569	July 1951 815,547
	New Orders Tons	972,183	809,318	814,729
	Unfilled Orders Tons	444,210	352,864	537,591
	Our Customers Activities Index[1]	**Latest Mo.°**	**Previous Mo.°**	**Year Ago°**
FRS	Manufacturers Total Index	223	224	233
	Durable Mfg. Index	276	277	277
	Nondurable Mfg. Index	179	181	197
	Chemical Products Index	294	296	298
	Mfg. Food Products Index	151	149	159
	Printing and Publishing Index	174	180	179
ODC	Magazine Advg.-Printer's Ink Index	388	404	355
	Retail Sales Combined Adjusted Index	388.1	382.5	370.7
	Drug Index	253.2	257.1	239.2
	General Merchandise Group Index	410.7	403.8	399.7
	Grocery and Combination Index	464.7	456.0	434.5
	Prices Index			
BLS	Consumers Price Index[1]	189.0	188.7	185.4
	Wholesale all Commodities[4]	111.6	111.8	115.9
	Wholesale Processed Foods	108.6	108.0	112.3
	Commodities other than Farm Products and Foods[4]	113.0	113.3	116.8
	Wholesale Pulp, Paper[4] and Allied Products	117.1	117.4	119.8
	Purchasing Power of Dollar, Consumers Prices[1]	52.9	53.0	53.9
	General Activity Index			
FRS	Mfg. Production-Worker Payroll[4]	130.9	127.8	128.1
	Unemployment Compensation Initial Claims (M)	915	1,109	908
	Miscellaneous Carloadings–Thousands of Cars	1,803	1,480	1,945
	Electric Output (Million KW hr.)	37,065	36,736	35,136
PTJ	Average 32 P & P Common Stocks as of Aug. 23	$35.25	$36.18	$38.91

[1] 1935–39 = 100 Unadjusted Index.
[2] For Five Weeks.
[3] New 6-7 day basis.
[4] New Index 1947–1949 = 100.
* For details see APPA Monthly Statistical Summary—June 1952 Estimated Figures.
° Latest Month Available on Request.
x Revised Figures.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Paper TRADE JOURNAL

TRENDS

Firmness Gathers in Waste Paper Market

From what started out to be a dealer's market in early August—defined as the right moment for the man holding the bag to see what he can get for it—the waste paper market has amassed firmness in low grades, ledgers and tab cards, particularly.

Notably stronger in all eastern markets is the old corrugated container grade. Priced for the month at $18 in Chicago, this grade stood at $10/11 (or less) in New York at the month's beginning. Late lifts of $3 in this market bring today's mill price here to $15/18, f.o.b. cars shipping point, with the likelihood that the strong buying will erase the $15 low by the first of the month. Boston's market reports a $4 lift to $18/19.

No. 1 News also is much stronger at $14/16 f.o.b. cars shipping point, following the latest $3 rise.

Firmer too are white shavings, manila tab cards and white ledger at August 20 prices of $92.50/105, $70/75, and $55/60 respectively.

Board Pickup Is Sustained

Responsible for the stronger prices is the sustained pickup in board output. As of August 16, industry output stood at 89 percent of rated capacity, compared with the year's average of 82 percent and with the comparable week of 1951 at 93 percent.

New orders during the week showed a 7,000 ton gain over the 1951 week, though indicating a drop of 40,000 tons from the earlier week when the month's heavy volume was placed.

Raw Materials Markets

Cotton Cuttings.— Spotty mill buying of high grade cuttings is reported for the New York area with prices definitely on the stronger side.

For white shirts, a 17 cent delivered mill price is held to be a fair level, though 16/18 cents also were reported, according to grade. Compared with the lows of July's dull trading, this represents a lift of 2½/3 cents a pound.

TABLE I
Cotton Linters Market

Official Grades	Memphis Market f.o.b. Oilmills cents per lb.	Production (Bales) June, 1952	Aug. 1, 1951-June 30, 1952	%	Stocks at Oilmills June, 30
1st cuts		12,000	415,373	24.4	47,710
1	n.a.				
2	13.00/11.75				
3	11.00/10.00				
4	9.25/ 8.25				
2nd cuts		31,000	1,180,324	69.3	87,306
5	7.75/ 6.50				
6	6.00/ 5.50				
7	5.50/ 5.50				
Millruns		2,000	107,011	6.3	13,050

Source: Dept. of Agriculture, American Cotton Linter Assn.

Until a more definite pickup in *rag content* demand is assured, there seems to be no anxiety on the part of the paper mills to acquire more stocks of cuttings.

With the expectation that such a pickup is in the making, dealers are showing no willingness to let go of white shirts at lower prices. In some areas, the market is described as definitely bullish.

Rag stocks in the hands of paper mills as the close of June were reported by the Bureau of the Census at 53,180 tons, compared with 54,818 tons in May and with 60,991 tons in June, 1951. Consumption for the same months was 28,323 tons in June, 1952, 30,914 in May, and 32,401 tons in June, 1951.

In other words, stocks for the month of June were equal to two months consumption, at the June output rate. Purchases during the month amounted to 26,920 tons.

Cotton Crop Forecast.— Forecast of the 1952 cotton crop as announced by the Department of Agriculture is some 3 percent less than the revised 1951 crop production figure of 15,144,000 bales. The 1952 estimate is 14,735,000 bales.

Cotton Linters.— Markets for the week ended August 21 were less active than the previous week, according to the Department of Agriculture. Most consumers had covered their immediate needs and were reported to be awaiting movement of new crop linters. Offerings of new crop linters were light as some mills crushing new crop seed in the southwestern area were tendering to CCC. Old crop linters were offered freely by dealers and CCC had linters for sale. Prices were a little lower with some adjusting in prices reported for higher qualities in the southwest and deductions for grade 3 and lower in the far western area.

Materials

Casein.— Trading in imported product has been brought to a standstill by exhaustion of this period's import quotas. Unless the Dept. of Agriculture acts in response to dealer and consumer complaints of hardship and either raises the quota for the first third of the fiscal year or—what is more desirable—restores casein to its chemical classification from that of dairy product as now defined, dealers can sell no more casein till November when the quotas for the year's second third become effective.

The market is disturbed by this situation at home, and by unsettled internal conditions in the Argentine and in Europe. Prices are unchanged and firm.

Fuel Oil.— More price declines for Bunker "C" were announced for East Coast cities last week. Varying from 3 to 31 cents per barrel, the new prices are said to pass along the decline in cargo rates for ships.

Rosin.— The local market in gum rosin looks firm to the trade with inquiry brisk, export interest active.

Savannah demand is described by the USDA as fair-to-good in WW, WG, and K grades. Demand has improved with some price gains noted of about 10c a hundred pounds.

Twines.— Easier supply conditions in raw materials has produced lower prices for hard fiber tying twines of at least one manufacturer. Effective August 21, prices for reels of twisted twines and lath yarn are reduced approximately 13½ cents per pound to 35 cents for 1 ply "Bond", regular 240 ft. yarn, f.o.b. mill.

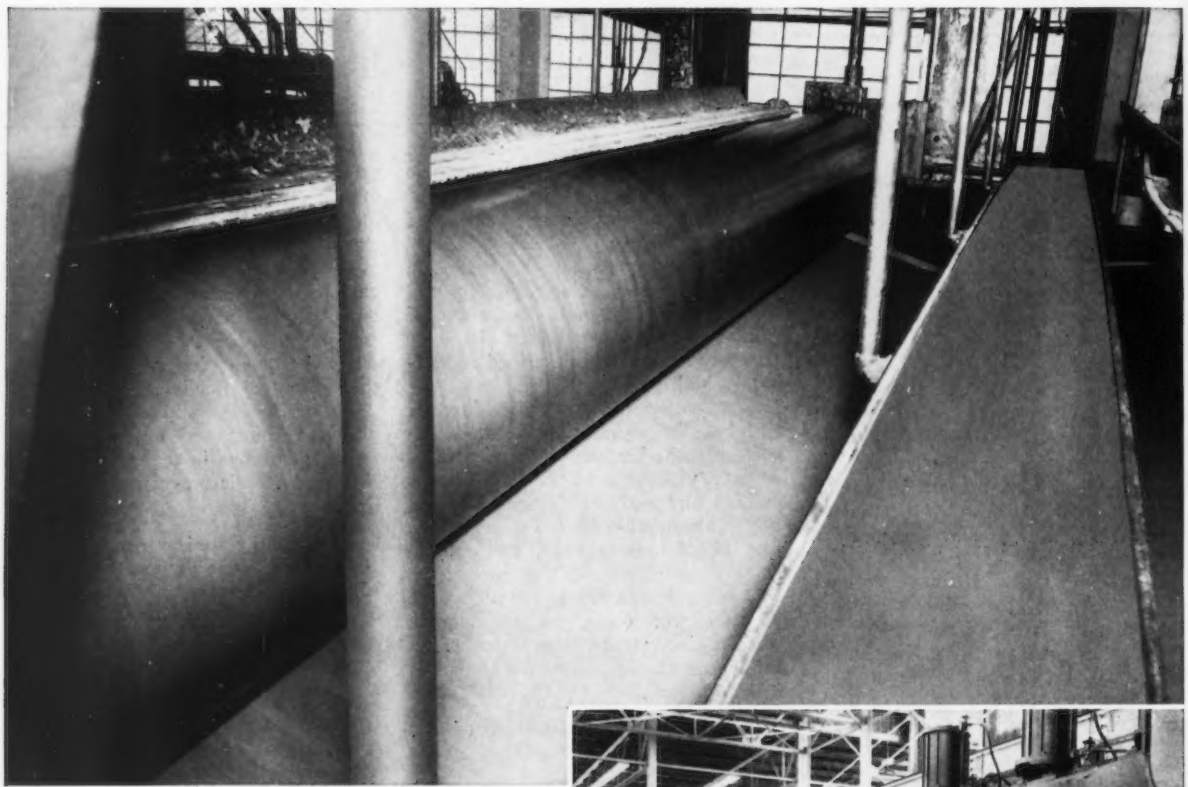
—E.P.N.

Paperboard Production (Tons)*

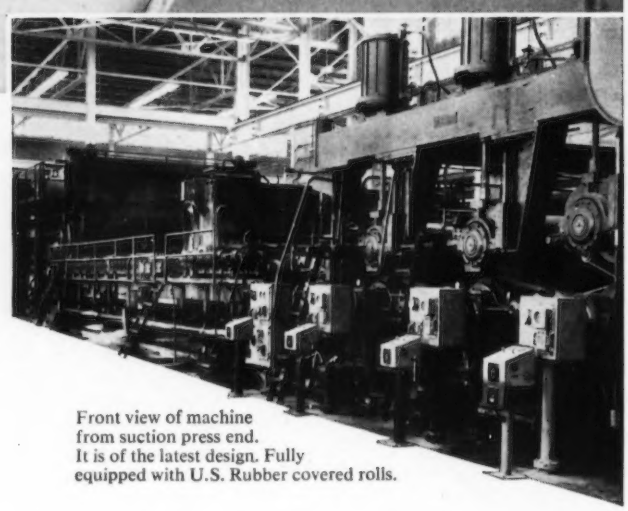
	Aug. 16 1952	Aug. 9 1952	Aug. 18 1951
Production	219,857	220,763	223,617
New Orders	194,899	233,200	187,002
Unfilled Orders	431,711	456,005	568,311
% of Activity	89	89	93

* Source: National Paperboard Assn.

What's U. S. Rubber doing in a Southern Paper Mill?



Close-up of suction press rolls in the paper mill.



Front view of machine from suction press end. It is of the latest design. Fully equipped with U.S. Rubber covered rolls.

What's U.S. Rubber doing? Well, for one thing its custom-made roll coverings are used throughout this mill. They were designed and installed after "U.S." engineers analyzed operating conditions, checked operating speeds, working pressures, types of stock—all to make sure of the best results.

For more efficient production and more economical operation, paper mill officials in all parts of the country rely on the advice and experience of United States Rubber Company technicians. For full information, write to address below.

PRODUCTS OF U.S.RUBBER SERVING THROUGH SCIENCE

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R. A. McDonald Named Acting Deputy Administrator

Richard A. McDonald on August 25 was named Acting Deputy Administrator of the NPA.

Mr. McDonald is with the agency on leave as chairman of the Executive Committee of the Crown-Zellerbach Corp. of San Francisco. He succeeds Franz T. Stone of East Aurora, N. Y., who has resigned.

Edwin C. Garwood of Berkeley, Calif., will succeed Mr. McDonald as assistant administrator in charge of the agency's industrial and agricultural equipment bureau. Mr. Garwood formerly was budget director and chief of staff for the Mutual Security Agency.

Still Plan to Rebuild Pacific Paperboard

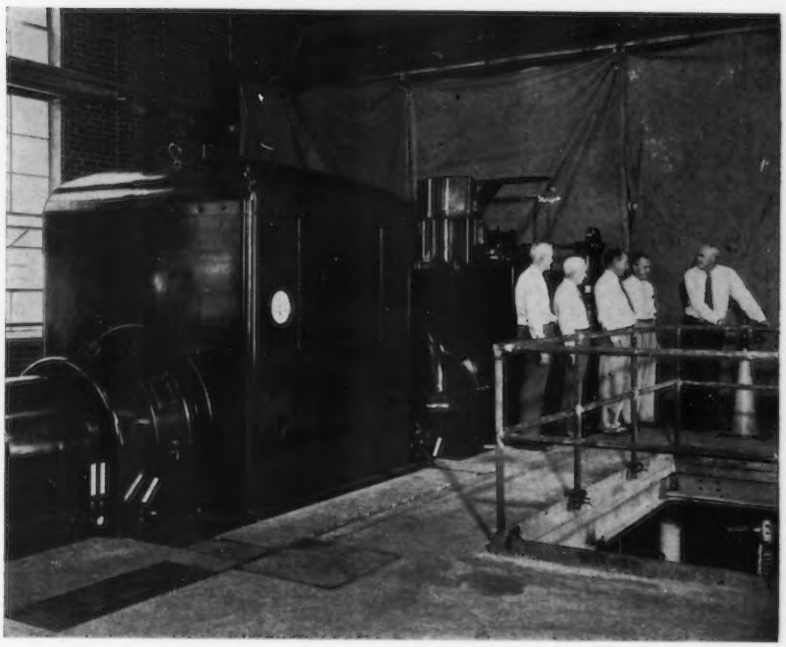
PORTLAND, Ore. — Information received locally from Longview, Wash., is that Everett Flood and Mrs. Florence Lynch, vice-presidents and directors of the burned-out Pacific Paperboard Co., have assured Longview interests: "We still intend to rebuild as soon as possible."

The company officials said that an inventory of ruined and salvageable equipment, left by fire that destroyed the plant early this year, should be completed within ten days, and that application for an RFC loan will follow.

Hammermill Back to 6-Day Operations

Hammermill Paper Co., Erie, Pa., will return to full six-day operation. The mill has been operating five days a week since July 7, when the mill resumed operations after a one-week shutdown for vacations and maintenance. This will be increased to 5⅔ days—and thereafter until further notice the mill will operate at normal capacity.

One of the important factors in the resumption of capacity operations is that the settlement of the steel strike eliminated one large uncertainty from the business horizon. In addition, Hammermill management sees indications that liquidation of inventories which started in the spring has now nearly expended itself. And, finally, the customary summer letup in orders will soon have run its course.



Eastern's New Generating Plant

Left to Right—E. L. Aldrich, mechanical superintendent, Lincoln mill; Harry C. Lord, John A. Stevens, Inc., engineers, Lowell, Mass.; Max D. Getchell, chief engineer, Eastern Corp.; Harold Holden, president, Eastern Corp.; Charles G. Paine, vice-president and general manager, Eastern Corp.

The enlarged and modernized steam and electric generating plant at Eastern Corp.'s Lincoln, Maine, paper and pulp mill went into full operation on August 14 when the new General Electric 3125-kva. turbo-generator was started up.

The new turbo-generator is of the double-admission, double-extraction, condensing type, generating 3-phase 60-cycle current at 600 volts. It supplements a smaller low-pressure turbo-generator. In normal operation, steam is admitted to the turbine throttle at 600 pounds pressure. Passing through the turbine, steam is bled off at 135 pounds and 40 pounds pressure for process use in the pulp mill and paper mill.

Completion of the Lincoln turbo-generator installation rounds out a power plant expansion program at this mill begun in 1949 with the transfer of two low pressure boilers from the company's mill at Brewer, Maine, and the installation of a new Babcock & Wilcox high pressure boiler producing steam at 620 pounds. The boiler plant now consists of three low-pressure boilers and one high-pressure boiler, having combined capacity of 250,000 pounds of steam per hour.

Until the new turbo-generator went on the line, all boilers were producing low-pressure steam for process use, and for operating the old generator at 150 pounds pressure. As planned the high pressure boiler and the new turbo-generator operate as a matched unit and the low-pressure boilers produce steam principally for process use. When the high-pressure boiler is shut down periodically for maintenance, the turbine will draw 140-pound steam from the low-pressure boilers and generate approximately 2700 kva.

A similar program was carried out at the Brewer mill in the building of a new steam and electric generating plant of 10,000 kva. capacity which went into operation in 1948. Thus, a significant forward move has been completed in providing a low-cost steam and electric power supply for the company's pulp and paper manufacturing, with minimum likelihood of interruption from outside causes.

JULY NEWSPRINT REPORT
NEWSPRINT ASSOCIATION OF CANADA, MONTREAL

I. PRODUCTION AND SHIPMENTS in short tons: 2,000 pounds		JULY 1952	JULY 1951	JULY Percent Change	YEAR TO DATE 1952	YEAR TO DATE 1951	YEAR TO DATE Percent Change
1. Canadian Production:	mo. and yr. to date	485,539	452,455	+ 7.3	3,309,444	3,201,140	+ 3.4
	per working day...	18,462	17,955	+ 2.8	18,304	17,804	+ 2.8
	percent of capacity.	103.5	103.2		102.6	102.3	
2. Canadian Shipments:	to United States...	408,802	385,751	+ 6.0	2,797,367	2,769,465	+ 1.0
	to Can. Consumers.	30,451	29,097	+ 4.7	209,811	207,042	+ 1.3
	to Other Markets..	43,997	28,118	+ 56.5	260,082	168,800	+ 54.1
	total: all markets..	483,250	442,966	+ 9.1	3,267,260	3,145,307	+ 3.9
3. U. S. Production:..	mo. and yr. to date	94,192	92,481	+ 1.9	683,087	644,497	+ 6.0
4. U. S. Shipments:..	to U. S. Consumers	88,919	89,548	— .7	632,531	638,096	— .9
	to Other Markets..	6,014	1,327	+353.2	49,297	6,022	+718.6
	total: all markets...	94,933	90,875	+ 4.5	681,828	644,118	+ 5.9
5. U. S. Imports from Europe.	*est.; see Table 8	*12,500	14,207	— 12.0	106,836	114,399	— 6.6

II. CONSUMPTION AND STOCKS in short tons: 2,000 pounds		JULY 1952	JULY 1951	JULY Percent Change	YEAR TO DATE 1952	YEAR TO DATE 1951	YEAR TO DATE Percent Change
6. U. S. Consumption:	estimated total	439,639	441,642	— .5	3,467,222	3,429,439	+ 1.1
7. North American Stocks:	U. S. Consumers..	785,319	685,773	+ 14.5	785,319	685,773	+ 14.5
	Canadian Mills ...	144,094	144,975	— .6	144,094	144,975	— .6
	U. S. Mills	8,827	8,620	+ 2.4	8,827	8,620	+ 2.4
	estimated total	938,240	839,368	+ 11.8	938,240	839,368	+ 11.8
8. A.N.P.A. Report:.. 525 Newspapers	Consumption	329,729	333,440	— 1.1	2,600,416	2,589,227	+ .4
	Stocks (tons)	607,771	500,445	+ 21.4	607,771	500,445	+ 21.4
	Stocks (days)	57	46		57	46	

The Lincoln power plant project was planned by Eastern's engineering department under the direction of Max D. Getchell, chief engineer, with the cooperation of John A. Stevens, Inc., consulting engineers of Lowell, Mass.

Sue Sutherland In Test Case

The independent union of the Sutherland Paper Co. Employes, Inc., has filed suit in federal court against the Sutherland Paper Co., Kalamazoo, Mich., seeking alleged back pay for three of its members. In the suit the union charges that the three men had been temporarily transferred earlier this year from their regular jobs to posts with a lower rate of pay.

Maurice Porter, acting president of the union, said the suit is being conducted as a "test case" and if won would involve "quite a number" of members of the union. The suit asks restitution of lost pay for the three workers and a court order to prevent future similar transfers.

Lily-Tulip Completes Springfield Plant

Lily-Tulip Cup Corp. has completed in Springfield, Mo., the newest addition to its production facilities.

A thousand feet long and enclosing ten million cubic feet of space, the Springfield plant is designed to produce, ultimately, the company's full line of paper cups and containers.

T. & H. Appoints Junior Board

Amor Hollingsworth, Jr., president, has announced that the board of directors of Tileston & Hollingsworth Co., believing in the experience of age and aggressiveness of youth, have appointed Assistant Vice-President Paul Brown; Herbert Smith, sales department; Warren Witherell, accounting department; Purchasing Agent Warren Price, and Mill Manager John Ardini as members of the newly formed junior board of directors. The purpose of this board will be to make suggestions and recommendations for the consideration of the senior board along any lines that may improve the operation of the company.

This new move extends an opportunity to members of the organization other than top officers to contribute more directly to the management of the company.

Scott Plans Early 1953 Construction at Everett

Scott Paper Co. is scheduled to start building a paper mill adjacent to the company's Soundview Division Pulp Mill at Everett, Wash., early in 1953, contingent on the delivery of steel and other materials and the successful completion of financing negotiations which are already underway.

The paper mill will be equipped initially with one high speed paper machine together with appropriate converting and finishing equipment, and will have sufficient floor space and boiler plant capacity for the future installation and operation of a second paper machine. The building will be designed and located to permit further expansion.

This will be Scott's first paper mill on the West Coast. The new paper mill will create an integrated operation from trees to finished products, permitting the manufacture of uniformly high quality products.

Olson Gets M & O Fellowship

Charles E. Olson, Jr., a 1952 graduate of the University of Michigan, School of Forestry, has been awarded the Minnesota and Ontario Paper Co.'s $1,500 graduate research fellowship in forestry for the 1952-53 school year. Mr. Olson will use the fellowship to investigate the regeneration status of cutover upland spruce, balsam and hardwood forest types in the vicinity of Big Falls, Minn.

The M and O fellowship, established in 1946, provides for studies concentrated on forestry problems meriting special attention. The results of these studies are made available to the public. They are helpful to foresters, public owners of forest lands and private owners in evaluating past cutting practices and in determining possible improvements in the way such trees are harvested.

NEW PAPER USES

Emergency Liner for Trucks

A new reinforced emergency liner marketed by the J. J. Lipp Paper Co., 323 W. Polk street, Chicago 7, Ill, transforms gouged, splintered, punctured truck interiors into smooth, scuff-free condition suitable for first class freight hauling. It may be used for complete truck lining or for partial lining or to patch certain areas of the truck or trailer. Also, it may be used as a tail curtain to eliminate vacuum sweeps. The liner can be easily applied in minutes with either pressure-sensitive tapes or staples.

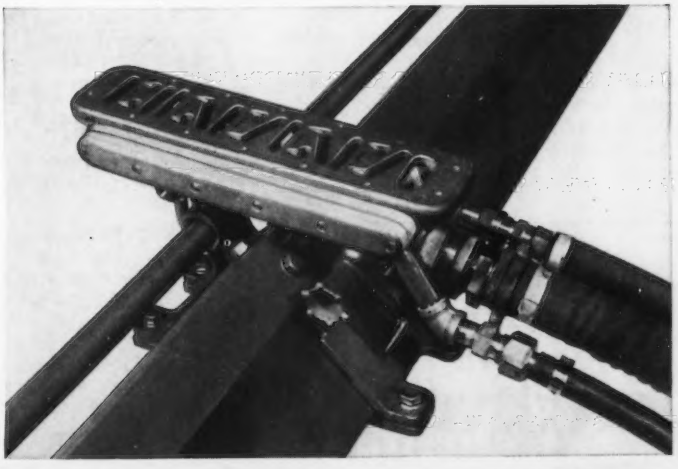
The company states that Trucker's Emergency Liner prevents cargo damage due to highway splatter, trailer seepage, or damage from water, oil or grease. Also, that use of the Lipp liner enables haulers to prevent contamination of cargo resulting from damaging fumes and odors.

The liner is reinforced, waterproof, tough and durable, and creped to stretch. Comes in easy to handle 62 inch width, with 164 lineal feet per roll. Tensile strength is 40 pounds per inch of width, with a stretch of 18 percent minimum.

The Faster Felts Run The Greater The Need For

VICKERY FELT CONDITIONERS

with the latest "Jordan" type vacuum boxes and the new high speed drives



Take a hard look at your press felts as they're running today. Make certain that your Felt Conditioners have the capacity to keep them always fresh and open without mid-week shut downs or slow downs.

BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

Fighting Papers Wanted

Invitations for bids have been issued by the New York Quartermaster Procurement Agency, 111 E. 16th St., New York 3, N. Y., on QM-30-280-53-93, covering Pads, memorandum, plain and ruled, 8 x 10½ and 3 x 5, 3,469,000 each. Bids will be opened September 19, 1952, at 10:00 a.m. (EDST) at the New York office. This procurement is for the U. S. Army.

• QM-30-280-53-128, covering Fiberboard, corrugated, water resistant, 57,500 sheets. Bids will be opened September 17, 1952, at 10:00 a.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

• QM-30-280-53-120, covering Paper, toilet tissue, crushed roll, 1,000 sheets per roll, 3,726,000 rolls. Bids will be opened September 9, 1952, at 3:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

• QM-30-280-53-115, covering Cups, paper, hot drink, capacity 8 oz., 102,600 boxes. Bids will be opened September 8, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

• QM-30-280-53-141, covering Bag, paper, coffee, glassine lined, with metal tie, capacity 1 pound, 5,259,000 each; and Bags, paper, kraft, various, 38,832,000 each. Bids will be opened September 22, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Army.

• QM-30-280-53-105, covering Napkins, paper, 13″ x 13″; 111,000 M. Bids will be opened September 30, 1952, at 10:00 a.m. (EDST) at the New York office. This procurement is for the U.S. Army.

• QM-30-280-53-104, covering Paper, toilet, 1,000 sheets per roll; 5,848,980 rolls. Bids will be opened September 26, 1952, at 10:00 a.m. (EDST) at the New York office. This procurement is for the U. S. Army.

A.P.W.

ONLIWON

INDUSTRIAL
TOWELS
TISSUE

Formosa to Get Map Paper

WASHINGTON, D. C.—Paper for map reproduction totaling $50,000 was authorized for procurement for Formosa, in the latest MSA list.

PEOPLE

HERVEY E. PARKER III has been appointed sales manager of Stone Container Corp.'s corrugated box division in Mansfield, Ohio. Mr. Parker joined the Chicago division of Stone Container in 1944.

WILLIAM J. GASS, JR., has been named sales manager of the St. Louis, Mo. area for National Container Corp. Mr. Gass has been associated with the box industry for 23 years as a designer, salesman and executive.

ELMER BORSUK, formerly with the Navy's Military Sea Transportation Service in New York City, has been named trade relations director and **Manny Mighdoll,** formerly assistant public relations director of the National Assn. of Waste Material Dealers, Inc., has been appointed public relations director of that association.

W. A. TAYLOR has been named general superintendent of the coating mill, **Leo J. Rose,** assistant general superintendent, and **William Vanover,** night superintendent of Champion Paper and Fibre Co., Hamilton, Ohio.

W. S. PATTON has been transferred to Holquiam from New York, where he was assistant district sales manager of Hammermill Paper Co. Mr. Patton will be assistant district sales manager for the Grays Harbor Pulp and Paper Co. and associated with **J. F. Wuenschel,** Pacific coast sales manager of the firm.

PAUL E. COOPER has been re-elected president of Pacific Mills Ltd. **J. A. Young** was re-elected first vice-president and treasurer of the company at the thirty-sixth annual meeting held in Vancouver, B. C. Other officers are **H. C. Pim,** vice-president in charge of sales; **O. D. Hallin,** vice-president in charge of woodlands; **R. H. R. Young,** vice-president in charge of manufacturing; **James H. Lawson,** secretary; **A. A. McLennan,** assistant secretary and **C. J. C. Hodson,** comptroller.

Re-elected to the board of directors were: **Hon. Eric W. Hamber, Mr. Cooper, Mayne D. Hamilton, Mr. Lawson, W. D. McLaren, Mr. Pim, W. E. Wintemute** and **J. A. Young.**

WILLIAM S. WOODWARD was appointed resident manager of the Hennepin Paper Co., Little Falls, Minn. and **Louis J. Wilhorn** was made general superintendent, effective August 1, 1952. Both of these men have been associated with the Hennepin Mill for a number of years.

TED CUTHBERTSON, comptroller of the Columbia Cellulose Co. Ltd., Prince Rupert, B. C., has been succeeded by **Harold Hudson** of Vancouver. Mr. Hudson was formerly with the Price Waterhouse Co. and more recently was secretary-treasurer and a director of Kelly Douglas & Co. Mr. Cuthbertson has been in Prince Rupert since the opening of the mill and is now at the New York office of the American Cellulose Corp., the parent company.

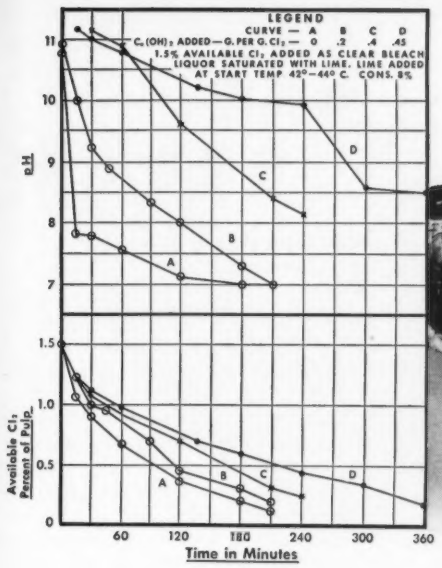
WILLIAM M. NORTH, secretary, becomes general manager at the Government-owned, National Gypsum-operated Kansas Ordnance Plant at Parsons, Kansas. **Colon Brown,** present general manager of this plant, will have general supervision of four of the company's subsidiaries including two recently acquired Wesco Waterpaints, Inc. concerns, one with headquarters at Montreal, P. Q. and the other at Berkeley, Calif. He will be located at the Buffalo Executive offices.

R. T. STEEDMAN has been named vice-president and general manager of Marathon Paper Mills of Canada Ltd. Mr. Steedman, who previously was vice-president and resident manager of the Mill Division, will move from Marathon, Ont., to the company's head office in Toronto.

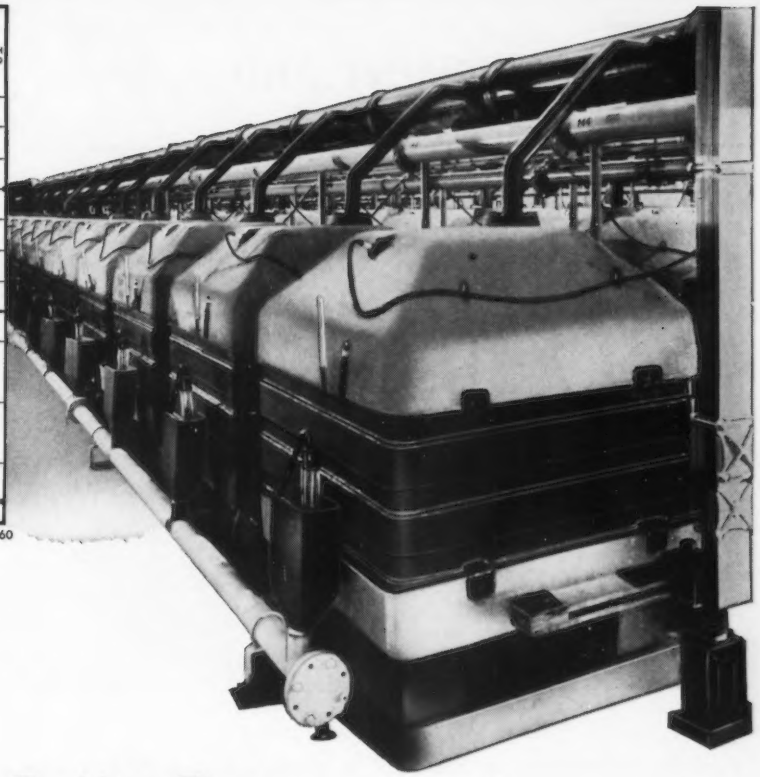
H. P. Klinestiver has requested his retirement to a consulting capacity and as such will be a staff assistant to John Stevens Jr., president of Marathon Corp. and Marathon Paper Mills of Canada, Ltd. Mr. Klinestiver has been with Marathon for about ten years, beginning two years prior to the time the company started construction of its Canadian plant. He is credited with much of the planning and organization which have made Marathon's woodlands operations in Canada outstanding.

P. V. LeMay assumes the management of the Pic Woodlands Division at Port Arthur. He started with Marathon in 1944, and since September, 1946, has been operating manager of the Pic operation. Mr. LeMay has been active in the development of mechanical logging and the inauguration of forest communities.

Grant Ross has been named manager of the Mill and Townsite divisions at Marathon, Ont. With Marathon since 1943, he was chief engineer of the Kraft mill till January, 1946, when he was named mill manager.


LEGEND
CURVE — A B C D
$C_a(OH)_2$ ADDED — G. PER G. Cl_2 — 0 .2 .4 .45
1.5% AVAILABLE Cl_2 ADDED AS CLEAR BLEACH LIQUOR SATURATED WITH LIME. LIME ADDED AT START TEMP 42°–44° C. CONS. 8%
pH
Available Cl_2 Percent of Pulp
Time in Minutes
60 120 180 240 300 360

Effect of lime additions on pH and rate of chlorine consumption in a hypochlorite reaction with chlorinated sulfate pulp.



Starting Point for Better Paper

The important bleaching step, at many mills, is handled with high-purity chlorine produced in Hooker "S" Cells at Niagara Falls and Tacoma.

So efficient are the "S" cells, that their widespread use by licensees and by Hooker is responsible for nearly one-half of the chlorine produced in the United States.

When you use Hooker Chlorine you can be sure of uniformity that keeps your bleaching methods constant. What's more, you can depend upon properly conditioned and inspected tank cars to insure trouble-free unloading and handling. Technical Service by Hooker assures you of experienced advice on the efficient, safe handling of chlorine and other Hooker Chemicals.

For copies of interesting and informative papers on bleaching listed here, please write on your business letterhead.

Send for This Helpful Bleaching Data

Bulletin No.

201 Process and Equipment for Making Bleach Liquor for Use Without Settling

211 Chemistry of Bleaching Chemical Wood Pulps

214 What Do We Know About Bleaching?

236 Importance of pH and Catalysts in Bleaching Operations

242 Production and Use of Unsettled Bleach Liquor

243 Procedures and Brightness Grades in Bleaching Sulfate Pulps

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

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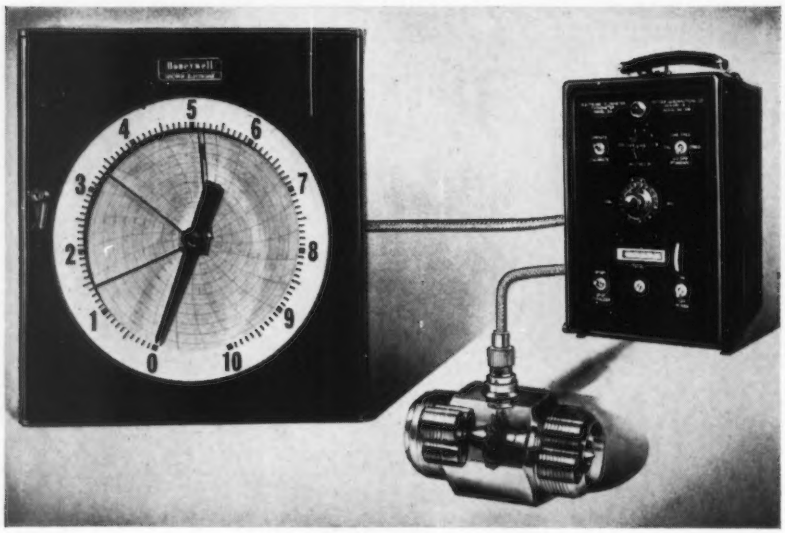
EQUIPMENT AND SUPPLIES



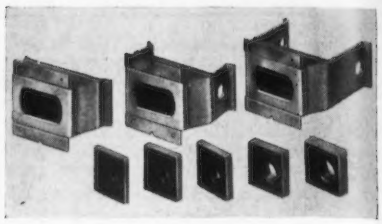
Flow Meter

Accurate measurement of flow of liquids and gas under difficult conditions is held possible with the use of a new improved flowmeter. Developed by Potter Aeronautical Company originally for aeronautical test and research, and recently improved in cooperation with the Industrial Division, Minneapolis-Honeywell Regulator Co., Wayne & Windrim Avenues, Philadelphia, Pa., the device is being marketed as the Potter-Brown Flowmeter.

There are three essential elements to the instrument — a sensing element which is installed in the flow stream; a converter which produces a d-c voltage output proportional to the frequency of the a-c output of the sensing element; and an electronic potentiometer which measures the d-c output of the converter and indicates and records it as flow. All parts except the sensing element are encased in a Brown-ElectroniK potentiometer.

Some of the sensing elements of the instrument are extremely tiny, one as small as 3/16 of an inch in diameter and in aluminum only 2½ ounces in weight. The largest element measures six inches and permits extreme accuracy of flow control up to 4,000 g.p.m., it is stated.

Rated capable of handling toxic or highly corrosive substances, viscous liquids or other fluids under pressures up to 20,000 p.s.i. and temperatures ranging from —269°C. to 1200° F., the device can be used for laboratory work as well as for industrial flow and automatic control applications. It is held particularly adapted for use in the current development of petro-chemicals and hydrogenated coal-to-chemicals.

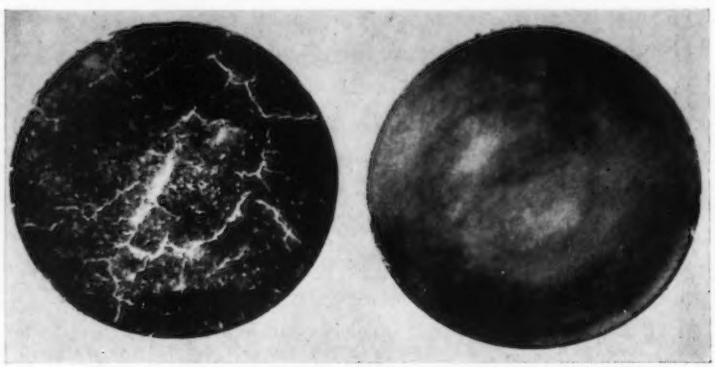


Fully Adjustable Insert For Concrete

Announced by Super-Grip Anchor Bolt Co., Inc., 3333 N. 22nd street, Philadelphia 40, Pa., is a new type of fully adjustable insert for use in concrete.

The insert is designed to eliminate time-consuming "fishing" to get the bolt started in the nut, after the nut is placed in the insert. The combination of the elongated hole in the face of the insert and offset hole in the nut makes it possible to put the nut on the bolt before placing in the insert, then to adjust it to any point of the compass, it is said.

Other advantages claimed for the inserts are: they will support a load of 1500 to 2400 lbs.; V-shaped notches in the face and two center grooves on the side simplify alignment of the insert on the forms; four small holes in the insert permit placing it on dowl pins or reinforcing rods. Inserts are made of heavy gauge steel and can be obtained for bolt sizes from ¼" to ¾".



Improved Resin for Chemical Resistant Cements

Fura-Tone® is announced as an entirely new and vastly improved resin which may be substituted for furfuryl alcohol resins for lining tanks, or as a cement for chemical bricks to obtain superior chemical and physical properties. According to the manufacturer, Irvington Varnish & Insulator Co., Irvington 11, N. J., the resin provides higher tensile strength, improved resistance to oxidizing solutions with better check or warp, also exhibits a notable improvement in shrinkage. Claimed also is that it will not crack, check or warp.

Technical Data Sheets supplying detailed information as to properties and application are available.

Quick Dry Enamel

Wilbur & Williams Company, 130 Lincoln street, Boston 35, (Brighton), Mass. announce a new type of enamel available under the trademark Totrust Enamel Instant Dry, the first to incorporate Ruvial.

Described as a free-flowing, extremely high-gloss fully tough, weather resistant enamel which also is highly resistant to chemical fumes and yet dries in a matter of minutes, it is said to offer a tough enamel which for

make stainless go a long way

With a little planning *you* can help stretch out the nation's stainless supply — and get faster delivery of stainless for *yourself!*

Crucible will be glad to help you accomplish this. Our metallurgists and stainless fabricating specialists have a wealth of experience with stainless. They can help you select satisfactory grades and finishes more readily available than those you are now using. This will help ease the bottleneck on stainless and will enable you to get faster delivery.

Call us today. We shall be glad to help you out.

CRUCIBLE first name in special purpose steels

52 years of Fine steelmaking

STAINLESS STEEL

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REZISTAL STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS

the first time is in the drying competitive field with lacquers.

Available in 24 colors, it is manufacturer recommended for applications where drying of paint films in a matter of minutes is important such as in exterior equipment, industrial machinery, etc.

Write for brochure.

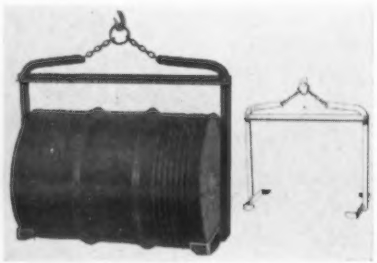
Rapid Sand Filter Control System

A reduction in installation and maintenance costs plus greater operating convenience are featured in the rapid sand filter control instrumentation engineered by Foxboro Co., Foxboro, Mass. and described in Bulletin 466.

Also described in the new bulletin are loss of head measurement, backwash control, clearwell level control of the filtration rate, and other operating details of the control system. Among the illustrations are drawings of a typical system and a schematic diagram of the instrumentation.

The system is the first to use completely-integrated pneumatic transmission and control, it is stated. Pneumatic transmission makes possible the complete and compact instrumentation contained in the operating table shown in cut. A four-position operation selector switch can be set for filtering, draining, backwashing or bypassing effluent to waste. Filtration rate is indicated by a Rate of Flow Controller, with rate changes easily made by moving the controller setting index. Air switches, enclosed in the end of the operating table, permit manual operation of each valve in the system, independent of the automatic control instruments.

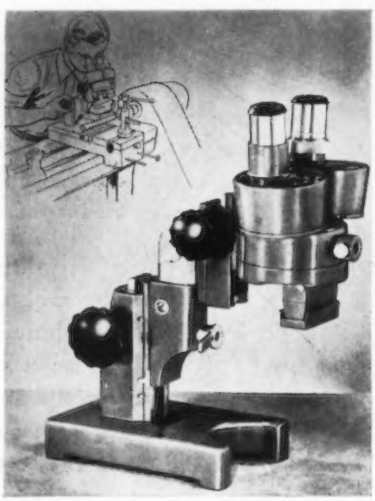
Other instruments in the system are factory-assembled in a dust-proof cabinet, requiring only simple ¼" tubing connections for installation. Receiving instruments, which may be located in the superintendent's office or at other important points in the plant, may be connected to give identical, simultaneous readings.



Barrel Cradle

This toggle type barrel cradle is designed for picking up any shape barrel, plywood or fiber drums, straight or bilged sides, flat or chimed ends, (flush ends). Manufactured by Palmer-Shile Company, 12655 Mansfield Avenue, Detroit 27, Mich.

Model shown accommodates barrel 20" to 25" in diameter and 32" to 36" in length; it also is held to be ideal for rolls of paper or anything that is cylindrical in shape. Capacity 1000 lbs.; weight approximately 45 lbs. Special sizes can be built to requirements.



Industrial Stereomicroscope

The Industrial Stereomicroscope was designed in response to industrial demand for an instrument which could cope with the ever-increasing quality control standards in processing plants. Developed by Bausch & Lomb Optical Co., Rochester 2, N. Y., the unit permits comfortable observation of an enlarged image with a wide field of view, long working distance, and three-dimensional, easily-interpreted qualities. When built into a processing or inspection set-up, it provides for continuing observation of the operation so that quality control standards can be adhered to.

A typical combination of wide usefulness, for instance, would be a 1.0X objective in combination with a 10X eyepiece, which would give 10X magnification with a 20 mm. field and a 95.9 mm. working distance. Through other combinations, magnification up to 150X is available. It embodies vertical eyepiece tubes with adjustments for interpupillary distance and balancing acuity of the observer's eyes, binocular dustproof prism bodies, and illuminator socket.

In connection with the instrument, the manufacturer offers a free consulting service to manufacturers and processing industries. Available to the paper mill, the service seeks to speed operations, improve quality control methods, etc.

Catalog D-1029 is available.

Plastic Mask

The GS No. 84 Mask and Shield offers low-cost protection against light dusts and chipping hazards. Marketed by General Scientific Equipment Co., 2700 W. Huntingdon street, Philadelphia 32, Pa., it consists of a featherweight, Lumarith plastic mask and cotton gauze filter designed to protect nose, lungs, face and eyes against nuisance dusts in all types of light, non-toxic work in industry, laboratory, etc.

Replaceable filter pad consists of cotton and sanitary gauze specially treated for softness. Extra filters are available.

Italy Places Wood Pulp On Free List

Italy has revised the list of goods which may be imported without licenses when originating in countries with which no commodity trading agreements are in effect, including Canada and the United States. The revised free list includes wood pulp for papermaking.

Herbert L. Wagner,

Vice-President in Charge of Engineering, Detroit Stoker Co., Detroit, Mich., Outlines Means of Maintaining Continuity of Service by Use of

Spreader Stokers and Flyash Reinjection*

The means of burning solid fuel by the spreader type method is not new in the broad sense of the word. Crude arrangements of this type of firing date back as far as 75 to 100 years. However, at that time, this type of stoker was merely a mechanical means of spreading coal on a natural draft grate having a correspondingly high percentage of air opening, therefore, the device could be considered nothing more or less than a mechanical shovel. The natural draft grate with its high percentage of air opening resulted in excessive ash pit losses due to unequal air distribution, blow holes in the fuel bed and excessive formation of clinkers. Consequently, the ash pile was just about as black as the fuel pile. Smoke from the stack was almost continuous except at times when the fuel feed was interrupted. Obviously, the advantages obtained from this type of firing were meager and the idea as a whole did not enjoy much popularity.

Up until the late twenties, the entire effort of the Detroit Stoker Company was devoted toward the manufacture of underfeed type stokers, consisting of single, double, triple and multiple retort machines. In the late twenties, the quality of solid fules was beginning to suffer, due to midwestern and western coals becoming more prominent, especially in the midwestern and western markets. Due to this gradual change in the fuel quality, our Company saw the need of some other type of firing that would be more adaptable to the burning of these high ash, high sulphur fuels.

Design work was started on the spreader type of firing and the first unit was put in operation in the spring of 1931 in our own plant at Monroe, Michigan. As a result of the experimentation and test work conducted on this initial unit, the first commercial installation of the Detroit RotoStoker was made in January 1932 in a Municipal plant in Colorado for the burning of Colorado Lignite. It is interesting to note that this installation, now over twenty years old, is still in operation and giving a very good daily account of itself.

On the strength of the results obtained from this installation in Colorado, the second RotoStoker installation was made in the central part of Michigan in September 1932.

The initial installation made in the Municipal plant in Colorado, insofar as we know, constituted the first spreader stoker equipped with power dumping grates and longitudinally divided air chamber and ash pit under the grate, one chamber for each feeder. The second installation made in the central part of Michigan was equipped with a stationary, hand cleaned type of grate.

No attempt was made at that time to provide for continuous or periodic returning of the cinders to the furnace, nor the periodic removal of the flyash from the hoppers under the passes of the boiler, except by manual means. Subsequent installations were made in different parts of the country and in the fall of 1934, our first attempt was made to provide a cinder return system, utilizing a high pressure, low volume type fan for continuously returning the ciders from the hoppers under the mud drum and the low draft loss dust collector back to the furnace. This installation was made for a prominent manufacturing company in Detroit, Michigan. This Detroit RotoStoker, complete with the original cinder return system, is still in daily service.

The cinder return lines entered the furnace through the bridgewall at an elevation of approximately 4′ 6″ above the grate. The system worked out exceptionally well, except as we know it today, the cinders were entering the furnace entirely too high above the fuel bed and grate surface, thereby accentuating the recirculation of flyash. A series of flyash tests were conducted on this unit in the spring of 1935 and it was learned that by introducing the cinders into the furnace at an elevation closer to the top of the grate and the fuel bed, the amount of recirculation of flyash could be greatly reduced.

As a result of these tests, subsequent installations were made with the cinders entering the furnace at lower elevations. The lowering of the elevation of cinder returns entering the furnace continued until at the present time they are located at approximately 12″ to 18″ above the grate surface.

As the size of the installations grew and as the amount of ash in the fuel likewise increased, the need of a grate that would continuously convey the ash and refuse out of the furnace as it was being formed became more and more apparent. In fact the preliminary design work along this line dates back as far as 1932.

This work was carried on in a more or less hap-hazard manner until the latter part of 1937 when it was definitely decided that the need of the continuous cleaning spreader stoker was urgent. As a result of this, all of the design work and detailed drawings were completed in the early part of 1938 and the first installation of the Detroit RotoGrate, a continuously cleaned spreader stoker, was made and started up in June of 1939 at a midwestern University.

FIGURE 1—This order consisted of two Detroit RotoGrate Stokers to be installed under two Class 13, No. 22 Stirling Boilers rated at 612 H.P. each. The boilers were set with a distance of 7′ 11″ from the centerline of the mud drum to the floor line and were originally equipped with natural draft chain grate stokers. The furnaces were completely revamped, moving out the front walls to provide more furnace volume; water cooling the side walls and bridgewalls and partially cooling the front walls. The side wall and bridgewall cooling consisted of 3-¼″ tubes spaced 6″ on centers, with the side wall headers located at the grate line with approximately 6″ of the header exposed above the grate.

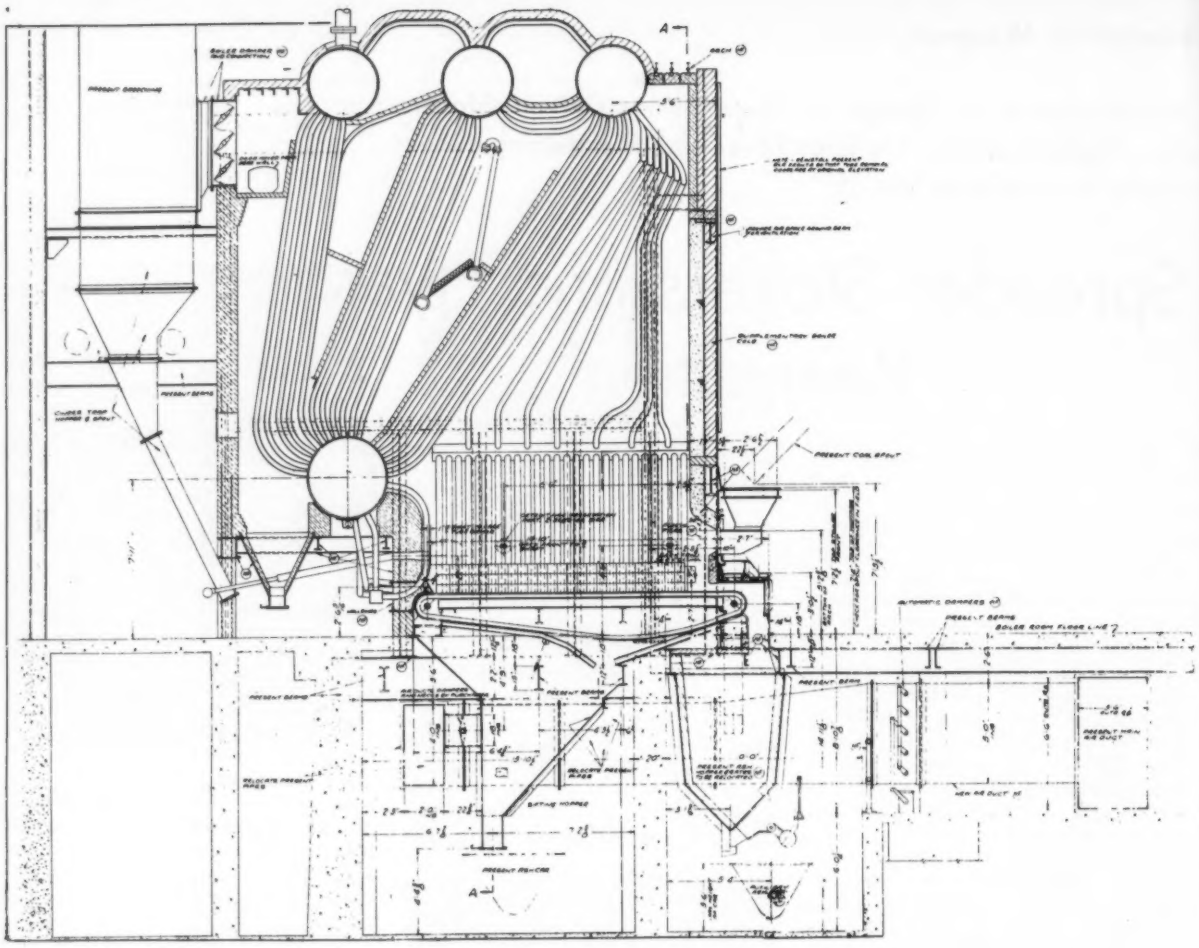


Figure 1

These units were designed for 38,000 lbs. of steam per hour for 24 hours and 48,000 lbs. of steam per hour for two hour peaks when burning Iowa raw screenings of the following analysis:

Moisture	16.45%
Volatile Mater	32.04%
Fixed carbon	35.02%
Ash	16.49%
BTU/lb. as fired	9,441
Ash Fusion Temp.	1955°F.
Sulphur	5.67%

Furnace and grate proportions:

Load in lbs. of steam per hour	38,000	48,000
Heat Release BTU/sq. ft. of grate per hour	380,000	480,000
Heat Release BTU/cu. ft. of furnace volume per hour	24,000	30,400
Heat Release BTU/sq. ft. of projecter heat absorption surface in furnace envelope/hr.	120,000	152,000

These units were equipped with low draft loss dust collectors served by one common natural draft stack.

As previously mentioned, this order consisted of two Detroit RotoGrate Stokers; however, only one unit was put in operation in June of 1939. The fabrication of the second unit was held up pending the operating results of the first unit.

The first unit was provided with five lateral air zones under the grate and a common plenum chamber so arranged that the air pressure under the grate could be varied independently in each of the five lateral zones. Fortunately, the power plant, being part of an educational institution, was equipped with adequate facilities for conducting weighed water boiler tests, including weigh tanks and a complete complement of boiler controls and test instruments. This gave us an excellent opportunity to collect some very accurate first hand data on the overall performance of this first unit.

After the initial weaknesses and discrepancies in design and fabrication were corrected, an almost continuous testing program was carried out for approximately six months. At the conclusion of this testing program, the changes in design of the second unit were decided upon. The only major change in the design was the elimination of the five lateral zoning dampers in the plenum chamber under the grate. This feature was completely omitted on the second unit. The reason for eliminating the lateral zoning feature was that up to that time, it was impossible to attribute any advantages in efficiency or performance to the lateral zoning feature.

The second unit was put in operation in the early part of 1940 and the two units were then operated simultaneously under parallel load and fuel conditions. The first unit functioned with the lateral zoning dampers as mentioned earlier, and the second unit without this feature. The results of this operating period again substantiated the initial deductions, namely that nothing was to be gained by the use of lateral zoning and therefore, the lateral zoning feature was removed from the first unit in the summer of 1940.

It will be noted that the heat release per sq. ft. of grate at the MCR rating as well as the peak rating on these units was very conservative, in fact, it was very much in keeping with what we had been using in design work for intermittenly cleaned grates. The operating results obtained on these two

units soon indicated to us that the grate was entirely too large for the specified duty and that much improvement could be made by providing less grate area, resulting in a higher heat release per sq. ft. of grate and a more active fuel bed.

On the strength of the knowledge gained during the summer of 1939 on the operation of this first installation, two Detroit RotoGrate Stokers were sold to a municipal plant in the eastern part of Nebraska. These units were installed under two horizontal water tube, vertically baffled straight tube boilers, each rated at 506 H.P. Due to the absence of slag and clinker formation on the installation at the University, the water cooled side walls on these two units were waived and the furnaces were equipped with water cooled bridgewalls and clinker chills at each side of the grate only.

On the strength of the information gathered on the first installation, the grates on these units were sized for a heat release of approximately 510,000 and 590,000 BTU per sq. ft. of grate per hour at the maximum continuous and peak ratings respectively. These units were designed for the burning of Pittsburgh-Kansas coal of the following analysis:

Moisture	5.58%
Volatile Mater	33.79%
Fixed Carbon	51.37%
Ash	9.26%
BTU/lb. as fired	12,526
Ash Fusion Temp.	1900°F.
Sulphur	3.14%

Furnace and grate proportions:

Load in lbs. of steam per hour	26,000	30,000
Heat Release BTU per eq. ft. of grate per hour	510,000	590,000
Heat Release BTU per cu. ft. of furnace volume per hour	42,400	49,000
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	294,000	340,000

The higher heat release per sq. ft. of grate was found to be definitely a step in the right direction; however, the omission of the water cooling in the side walls was definitely a mistake, since it proved to be the limiting factor insofar as optimum furnace conditions were concerned. It was found necessary to increase the excess air as the rating increased in order to keep the refractory in the side walls from rapidly melting away. Even though the performance of this unit was limited by the absence of water cooling in the side walls, these units very definitely indicated the advisability of a higher heat release per sq. ft. of grate for this type of firing.

FIGURE 2—On the strength of the perofrmance obtained at the first two installations, one Detroit RotoGrate Stoker was sold to a large manufacturing plant in the northern part of Indiana. This unit was designed for 175,000 lbs. of steam per hour for 24 hours and 210,000 lbs. of steam per hour for four hour peaks. This unit consisted of a three drum bent tube boiler equipped with water cooled furnace on all four sides, superheater and economizer. The stoker contained 347 sq. ft. of net air supplied coal burning grate area and was equipped with six feeders. This unit was also equipped with an induced draft fan of the cinder separating type.

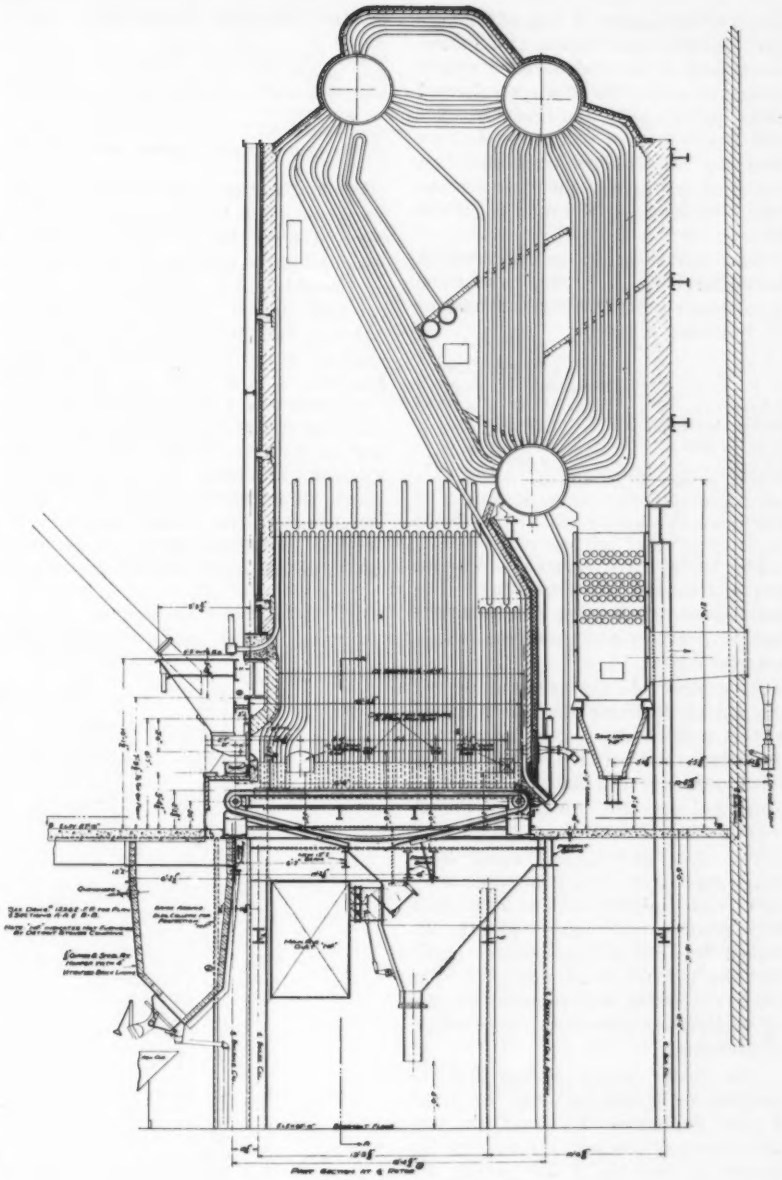


Figure 2

Furnace and grate proportions:

Load in lbs. of steam per hour	175,000	210,000	220,000
Heat Release BTU per sq. ft. of grate per hour	670,000	804,000	842,000
Heat Release BTU per cu. ft. of furnace volume per hour	26,900	32,300	33,800
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace evnelope/hr.	209,000	251,000	263,000

It will be noted that the heat release on this unit is considerably higher than that shown for the University job or the unit in eastern Nebraska. The design of this job was all predicated on the data collected on the two earlier installations and it is gratifying to advise that this unit has worked out exceptionally well and is still giving very good service.

It will be noted from *Figure 2,* that the side walls, bridgewall and front wall of this furnace are completely water cooled, consisting of 3-¼" tubes

spaced 6" on centers. A row of hoppers was provided underneath the economizer with a complete cinder return system returning the cinders collected at this point back to the furnace. Likewise cinder returns were provided for returning the cinders from the dust collecting feature of the cinder separating induced draft fan back to the furnace.

This unit was put in operation in November 1940 and to date has burned approximately 550,000 tons of coal of the following anlysis:

	Design Coal	Poorest Quality-Coal
Moisture	11.9%	....
Volatile Matter	30.1%	....
Fixed Carbon	51.5%	....
Ash	6.5%	14%
BTU/lb. as fired	11,698	9500
Ash Fusion Temp.	2300°F.	....
Sulphur	....	6.5%

The initial set of grates is still intact and in first class condition. The initial grate chain pins and sprockets however, were replaced approximately one year ago.

As a result of the performance of this unit, a duplicate unit was installed at this plant and put into commercial operation in December, 1945, and a third unit was installed in this same plant and put into commercial operation on May 17, 1949.

The first and second units were exact duplicates. The third unit however, was equipped with a high draft loss tubular type dust collector installed between the economizer outlet and the induced draft fan inlet. The cinders from the dust collector and the economizer are returned to the furnace continuously.

The cinder return system and the overfire air system on units No. 1 and 2 were duplicates. However, the cinder return system and the overfire air system on unit No. 3 was greatly improved. The percentage of overfire air was materially increased. The jets entering the furnace through the bridgewall were set at two elevations.

FIGURE 3—In the latter part of 1941 a Detroit RotoGrate Stoker was sold to a municipal plant in the southern part of Michigan. This unit was installed under a four drum bent tube Stirling boiler equipped with air heater, superheater, water cooled side walls and bridgewall. This unit was designed for 50,000 lbs. of steam per hour for 24 hour periods and 90,000 lbs. of steam per hour for four hour peaks, burning eastern Bituminous coal having about 7 percent ash and 13,800 BTU per lb. as fired. The stoker consisted of a RotoGrate having 128 sq. ft. of net air supplied coal burning area, equipped with three feeders.

Furnace and Grate Proportions:

Load in lbs. of steam per hour	50,000	75,000	85,000	90,000
Heat Release BTU per sq. ft. of grate per hour	575,000	862,000	977,000	1,003,000
Heat Release BTU per cu. ft. of furnace volume per hour	23,600	35,600	40,200	42,600
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	125,000	188,000	213,000	225,000

When this unit was designed, the maximum plant load was between 35,000 and 50,000 lbs. of steam per hour. From midnight until early morning the load would drop to approximately 8,000 to 10,000 lbs. of steam per hour. This unit was designed for the burning of a good grade of eastern bituminous coal; however, due to the second World War, this customer was forced to use coal that ran as high as 20 percent ash and as low as 10,000 BTU per lb. as fired. Likewise, during the second World War, their electric load kept increasing to the point where their average daily load would go as high as 75,000 to 85,000 lbs. of steam per hour with occasional peaks that exceeded 90,000 lbs. of steam per hour.

Although this unit was designed for exceptionally good eastern Bituminous coal, this customer did not find it necessary to sacrifice capacity or performance when he was forced to burn a low grade strip mine coal that ran exceptionally high in ash and low in heat value.

This unit is equipped with a high draft loss tubular type dust collector located between the air heater outlet and the induced draft fan inlet and a complete cinder return and overfire air system, returning all of the cinders from the hoppers under the mud drum

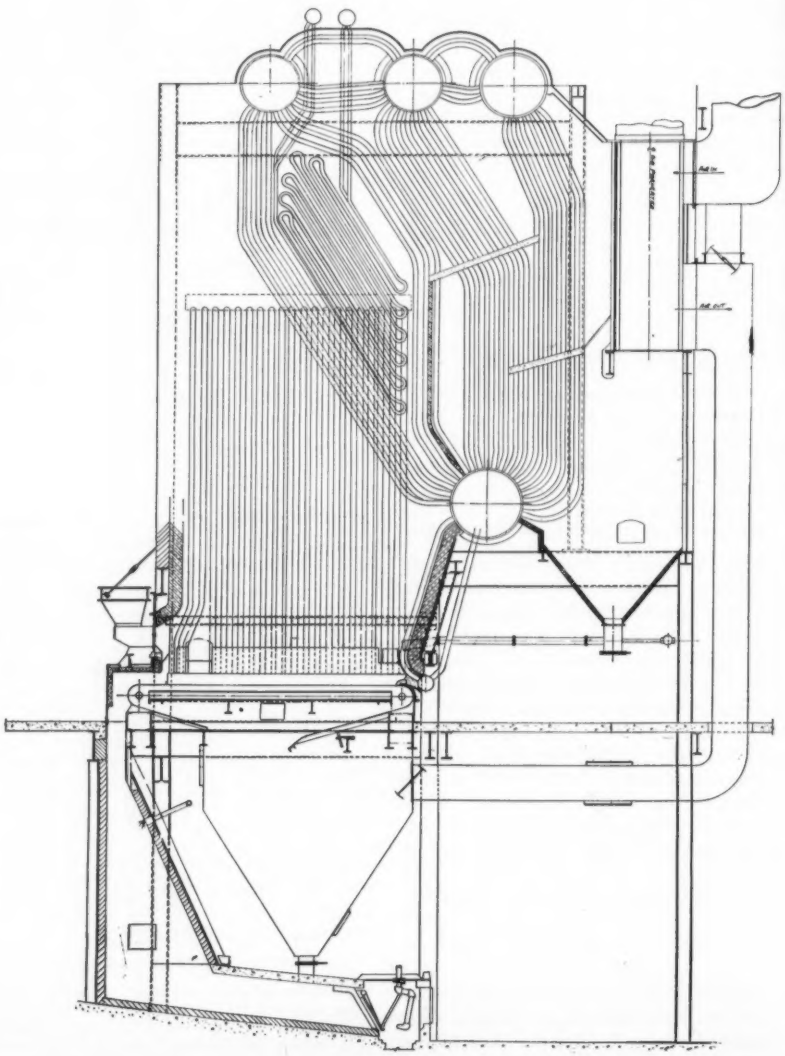


Figure 3

collector, back to the furnace. A short stub stack is provided on top of the induced draft fan discharge, projecting through the roof approximately 15 to 20 feet and to date there has been no indication of a dust nuisance in the vicinity of the plant.

FIGURE 4—This unit was designed and installed for a public utility located in the northeastern part of Wisconsin, and was put in operation on October 18, 1948. As you will note from *Figure 4,* this unit consists of a four drum bent tube Stirling boiler, equipped with water walls on all four sides of the furnace, consisting of 3-¼" tubes spaced 6" on centers and including superheater, economizer, air heater, dustcollector and induced draft fan. The Detroit RotoGrate Stoker is equipped with four feeders and contains 212 sq. ft. of net air supplied coal burning area. The unit was designed for 100,000 lbs. of steam per hour for 24 hour periods and 120,000 lbs. of steam per hour for four hour peaks. However, it now very commonly generates 120,000 lbs. of steam per hour continuously and 140,000 lbs. of steam per hour for peaks, when burning West Virginia Bituminous coal of the following analysis:

Moisture	4.8%
Volatile Matter	34.9%
Fixed Carbon	54.0%
Ash	6.3%
BTU/lb. as fired	13,500
Ash Fusion Temp.	2300°F.
Sulphur	0.9%

Furnace and grate proportions:

Load in lbs. of steam per hour	100,000	120,000	140,000
Heat Release BTU per sq. ft. of grate per hour	622,000	747,000	870,000
Heat Release BTU per cu. ft. of furnace volume per hour	30,000	36,000	42,000
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	122,000	146,000	170,000

The unit was originally installed with a complete cinder return and overfire air system, arranged for returning the cinders from the hoppers under the boiler, air heater and dust collector back to the furnace. However, after the unit had been in operation for approximately one year, the Detroit Stoker Company cinder separating and classifying type baffles were installed in the hoppers under the air heaters, so as to settle out a greater proportion of the carbon in these hoppers. This change reduced the carbon in the dust collector hoppers to such an extent that it was no longer advisable or economically advantageous to return this material back to the furnace. Therefore, the material taken out by the collector is now disposed of to the ash handling system.

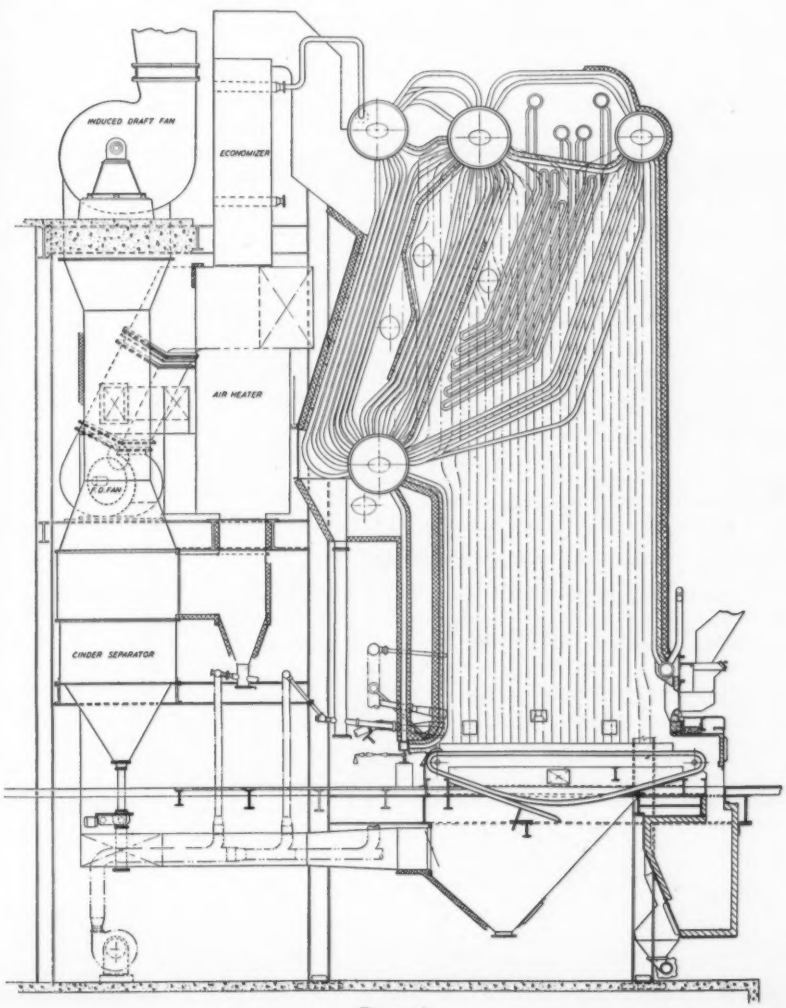


Figure 4

It will be noted from *Figure 4,* that the furnace is provided with a row of cinder return nozzles entering the furnace through the bridgewall at an elevation of approximately 18" above the grate which is supplemented by additional air jets located between the return nozzles. This in turn is supplemented by a row of air jets entering the furnace through the bridgewall at an elevation of approximately six feet above the grate. In addition to the above, a third row of nozzles enters the furnace through the front wall below the feeders.

FIGURE 5—This RotoGrate Stoker was designed and installed for a Pulp and Paper Company and was put in operation on November 7, 1949. This unit consists of a three drum bent tube boiler equipped with water cooling on all four sides of the furnace, consisting of 3¾" tubes spaced 6½" on centers, and including superheater, economizer, dust collector and induced draft fan.

The stoker is equipped with eight feeders and contains 469 sq. ft. of net air supplied coal burning area. The unit was originally designed for a capacity of 250,000 lbs. of steam per hour for 24 hours and 300,000 lbs. of steam per hour for four hour peaks, when burning Eastern bituminous coal of the following analysis:

Moisture	5.15%
Voltaile Matter	23.80%
Fixed Carbon	61.10%
Ash	10.05%
BTU/lb. as fired	13,100
Ash Fusion Temp.	2000°F.
Sulphur	2.3%

After almost all of the drawings were completed and ready for shop fabrication, it was decided to make provisions for the burning of 40,000 lbs. of wet bark per hour, simultaneously with coal. Due to the building restrictions and the stage to which the design and fabrication had progressed, it was necessary to introduce the bark

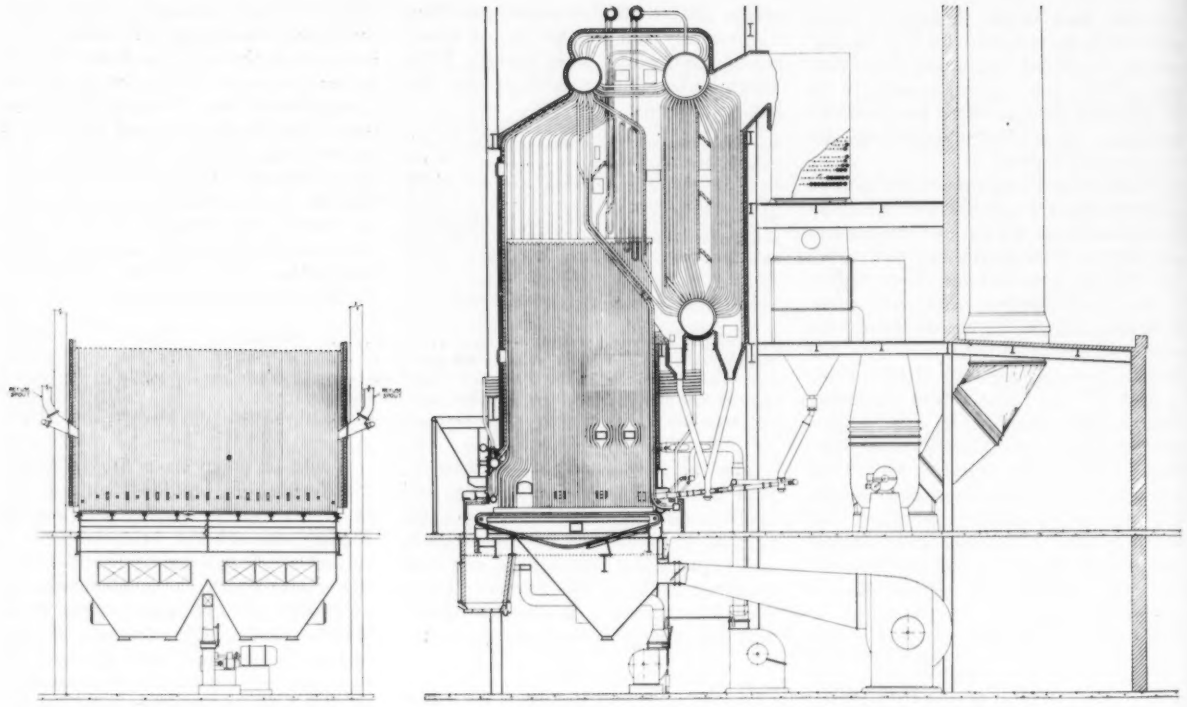


Figure 5

through the side walls directly forward of bridgewall through four air swept spouts, two located on each side of the furnace. These spouts are set at an elevation of 14′ 6″ above the grate line. This was a matter over which we had no control because this was the only place we could make provisions for the installation of these spouts. The present average bark consumption by the furnace is 60,000 to 70,000 lbs. per hour.

Most of the bark burns in suspension due to the elevation at which it enters the furnace and the effect of the furnace turbulence jets located in the bridgewall and the front wall. It is only under exceptionally wet bark conditions that any of the bark can be detected on the fuel bed.

As mentioned earlier, this unit was designed for a fairly good grade of bituminous coal; however, during the last two years, they have been burning coal consisting of refuse blended with a good grade, so as to bring the BTU content up to a predetermined level resulting in an average analysis of:

Moisture	3 to 10%
Volatile Matter	15 to 25%
Fixed Carbon	57 to 68%
Ash	9 to 17%
BTU/lb. as fired	11,000 to 12,000

Some of this fuel is strip mine, some is refuse blended with 1″ x 0″, resulting in approximately 75 percent of the size consist being less than ⅜″ x 0″ and some of the fuel being ¼″ x 0″.

Arrangements were made to feed the bark to the furnace at a constant rate, thereby depending on the coal to make up the difference of the heat required in the furnace. At best however, the rate of bark feed fluctuates quite violently at times, which in turn results in violent fluctuations in the coal feed, in order to maintain uniform steaming rates on the unit. Frequently, the coal feed will fluctuate from minimum to maximum feed position in a

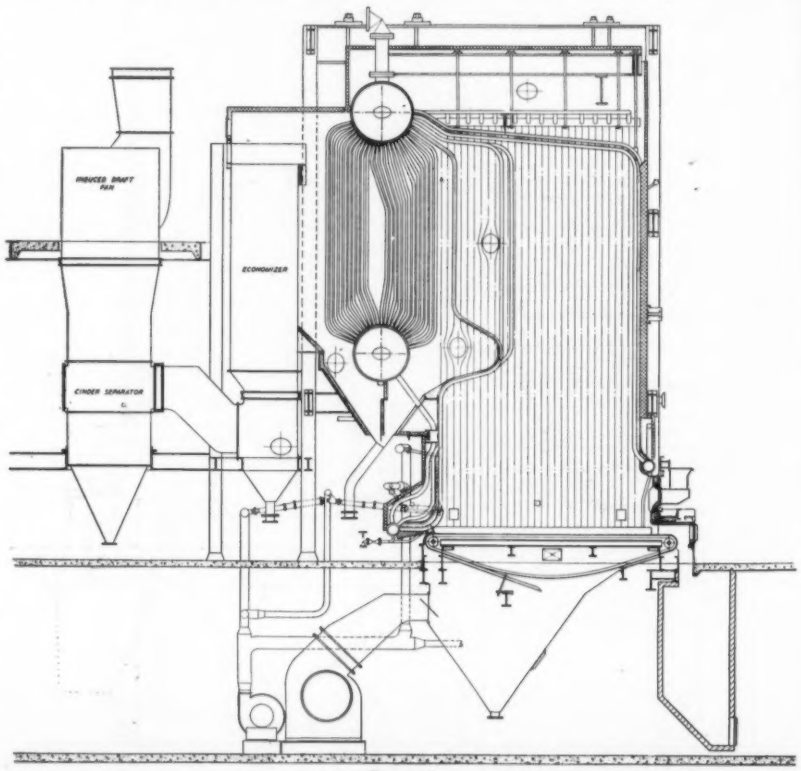
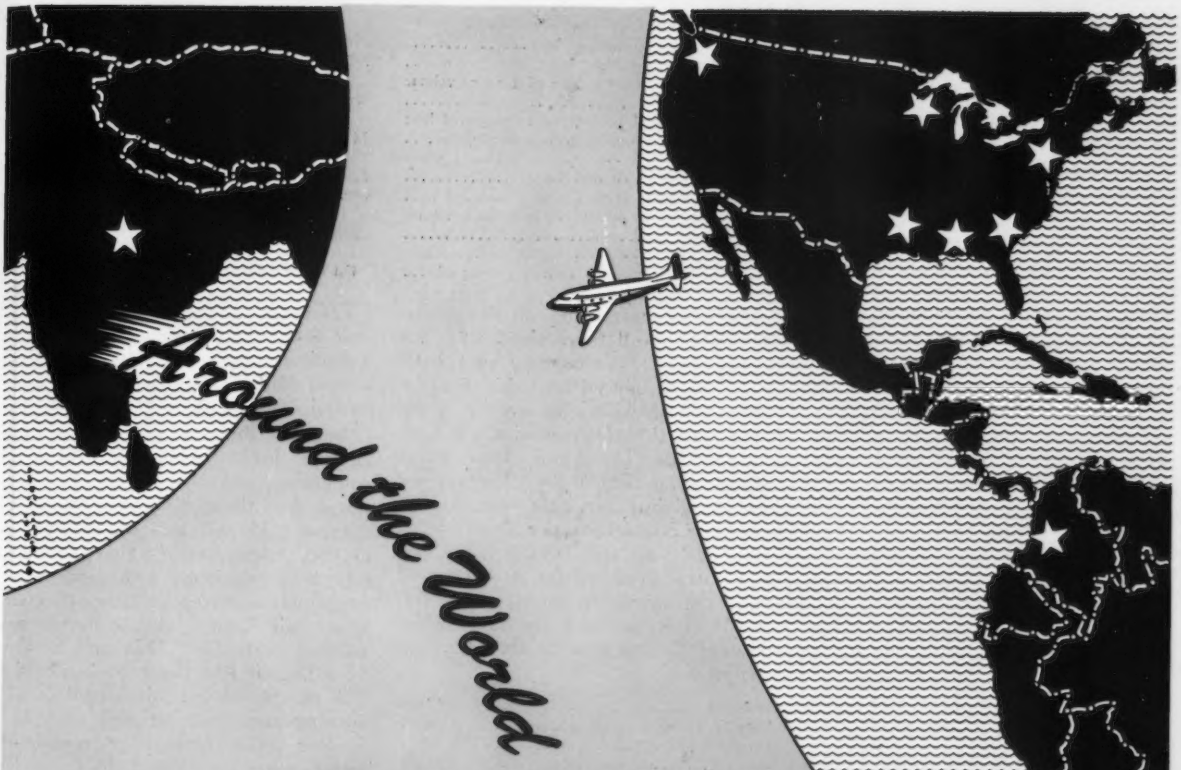


Figure 6



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matter of four or five minutes in order to maintain uniform heat input into the furnace.

The average load on this unit is somewhere between 240,000 and 280,000 lbs. of steam per hour, swinging between 200,000 minimum and 300,000 maximum.

This unit is equipped with a complete overfire air and cinder return system, the cinders being returned from the hoppers both to the front and to the rear of the mud drum of the boiler, as well as from the dust collector. In addition to this, there are two rows of overfire air jets through the bridgewall, at an upper and lower elevation, as well as two rows of overfire air jets through the front wall, again at an upper and lower elevation.

As mentioned previously, this unit was initially designed for a good grade of eastern Bituminous coal, and in the last stages of the design period, a sizable quantity of bark was brought into the picture and after the unit had been in service for a matter of a few months, the customer decided to take advantage of some blended refuse coal which he could purchase at a very attractive figure. As a result of the high ash content of the resultant fuel, and the quantity of the bark refuse being introduced into the furnace simultaneously with coal, it was found advisable to stop returning the flyash from the dust collector to the furnace, therefore provisions were made to dispose of this material to the ash handling system. The flyash collected in the mud drum hoppers is however still being returned continuously to the furnace.

A duplicate of *Figure 5,* with certain modifications was designed and installed for another pulp and paper plant and this unit was put in operation in July 1950. This unit was designed for 275,000 lbs. of steam per hour continuously and 325,000 lbs. per hour for four peaks. The general arrangement of this unit is almost an exact duplicate of that shown in *Figure 5,* except that no bark is being introduced into this furnace. The furnace is however, equipped with auxiliary oil burners so that the entire load can be carried on coal, or oil or a combination of the two fuels. In the initial stages of operation the unit was operated on oil long enough to prove the oil burning equipment and since that time has been constantly using coal as a fuel, having the following analysis:

Moisture	2.89%	5.3%
Volatile Matter	20.03%	36.3%
Fixed Carbon	75.93%	56.2%
Ash	4.04%	7.5%
BTU/lb. as fired	14,650	12,484
Sulphur	0.6%	0.6%

Furnace and grate proportions:

Loads in lbs. of steam per hour	250,000	275,000	300,000	325,000
Heat release BTU per sq. ft. of grate per hour	735,000	807,000	880,000	955,000
Heat Release BTU per cu. ft. of furnace volume per hour	20,500	22,500	24,600	26,600
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	145,000	160,000	175,000	190,000
Load in lbs. of steam per hour	225,000	250,000	275,000	300,000
Heat Release BTU per sq. ft. of grate per hour	670,000	740,000	815,000	890,000
Heat Releaes BTU per cu. ft. of furnace volume per hour	20,200	22,500	24,800	27,000
Heat release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	141,000	157,000	172,000	188,000

Provisions were made in the design of the side wall tubes similar to that indicated on *Figure 5,* so that bark could be introduced into this furnace at some future date; however, it is not anticipated that this condition will ever come to pass. The average load on this unit is about 275,000 lbs. of steam per hour or slightly less, with peaks well in excess of 300,000 lbs. per hour.

FIGURE 6—This Detroit RotoGrate Stoker was designed for 80,000 lbs. of steam per hour continuously and 90,000 lbs. of steam per hour for peaks, when burning Indiana coal of the following analysis:

Moisture	12.0%
Volatile Matter	34.0%
Fixed Carbon	40.0%
Ash	14.0%
BTU/lb. as fired	10,600
Ash Fusion Temp.	1950°F.
Suiphur	5.0%

This unit consists of a two drum bent tube boiler with single pass baffle and completely water cooled furnace. The water cooling in all four walls consists of 3″ tubes spaced 6″ on centers. The unit includes an economizer, dust collector and induced draft fan. The Detroit RotoGrate Stoker is equipped with three feeders and contains 142 sq. ft. of net air supplied coal burning area.

Furnace and Grate proportions:

Load in lbs. of steam per hour	80,000	90,000
Heat Release BTU per sq. ft. of grate per hour	760,000	855,000
Heat Release BTU per cu. ft. of furnace volume per hour	31,300	35,200
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	117,000	132,000

The load for a 24 hour period is very steady and averages something over 80,000 lbs. of steam per hour, as taken from their daily steam-flow charts.

The cinders from the boiler, economizer and dust collector hoppers are returned to the furnace. The overfire air jets enter the furnace through the brigewall at two elevations and through the front wall below the feeders.

Load in lbs. of steam per hour	75,000	100,000	120,000	140,000
Heat Release BTU per sq. ft. of grate per hour	475,000	650,000	778,000	910,000
Heat Release BTU per cu. ft. of furnace volume per hour	17,500	23,400	28,100	33,000
Heat Release BTU per sq. ft. of projected heat absorption surface in furnace envelope/hr.	80,000	104,000	127,000	150,000

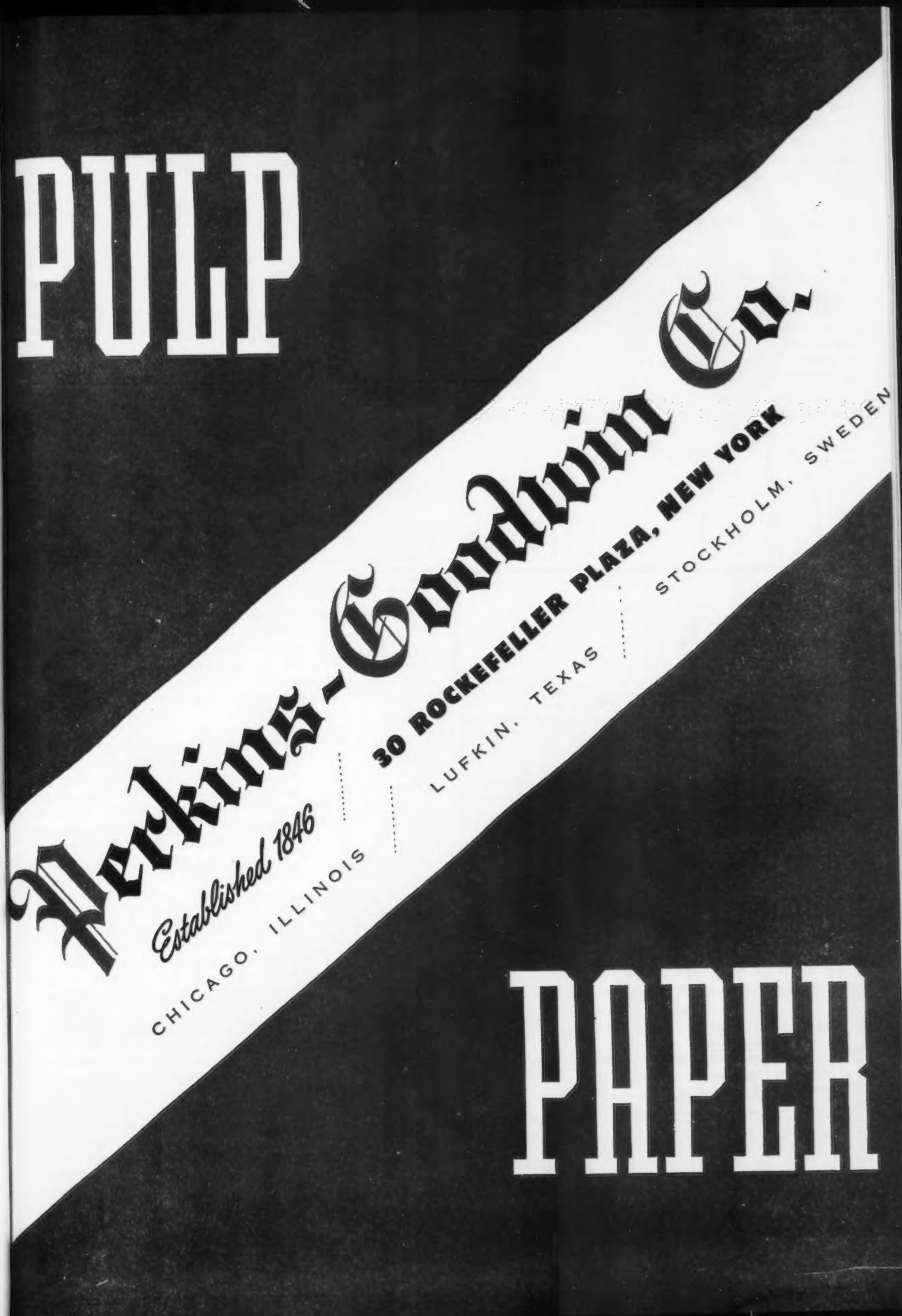
FIGURE 7—This is the second Detroit RotoGrate Stoker installed in the municipal plant located in the southern part of Michigan and mentioned previously in this paper under *Figure 3.*

Due to the constantly increasing electric load, additional generating equipment and boiler capacity were installed in the early part of 1950. In August 1951, this unit was put in operation. It consists of a two drum bent tube boiler equipped with superheater, completely water cooled furnace, economizer, air heater, dust collector and induced draft fan. This unit is fired by a Detroit RotoGrate Stoker having 204 sq. ft. of net air supplied coal burning area and equipped with four feeders. The furnace is completely water cooled on all four sides, consisting of 3″ diameter tubes spaced 6″ on centers. This unit was designed for 120,000 lbs. of steam per hour for 24 hours and 140,000 lbs. per hour for four hour peaks, when burning Ohio Bituminous raw screenings of the following analysis:

Moisture	5.0%
Volatile Matter	37.1%
Fixed Carbon	46.4%
Ash	11.5%
BTU/lb. as fired	12,200
Ash Fusion Temp.	1950°F.
Sulphur	4.6%

This unit is equipped with a complete overfire air and cinder return system for returning the cinders from the hoppers under the mud drum, economizer and dust collector back to the furnace. It also provided with two rows of overfire air jets through the bridgewall entering the furnace at two elevations, and one row of high pressure jets through the front wall below the feeders.

Furnace and grate proportions: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The average daily load on this unit is in the neighborhood of 100,000 lbs. of steam per hour, and if their electric load continues to increase as it has in the past ten years, it will only be a short time before their average load on this unit will be somewhere between 120,000 and 140,000 lbs. of steam per hour.

Conclusion

It will be noted from *Figures 1 to 7* inclusive that the arrangement of the cinder return system from job to job is quite a variable. The cinder return system on each job must be treated as an individual problem. In other words, there is no hard or fast rule that can be applied to the entire field covering all installations.

If sufficient fractionating points are provided ahead of the dust collector, it is of course then definitely advisable to dispose of the material taken out of the gas stream by the dust collecting equipment. This has been very conclusively demonstrated by jobs similar to that shown on *Figure 4*, where the initial installation was arranged for complete reinjection from all hoppers including the dust collectors.

After this installation was made, we completed the development of the Detroit Stoker Company classifier and low draft loss collector, which removes only the coarse particles entrained in the gas stream, allowing the finer particles to pass on through to the high draft loss collector. Since the carbon is predominantly found in the larger size particles of the entrained dust, the removal of the coarse particles and returning them back to the furnace, reclaims the major portion of the carbon entrained in the gas stream, thereby reducing the total carbon loss to a figure of minor importance.

The Detroit Stoker Co. classifier and collector was installed on this job and enabled the customer to dispose of the catch by the high draft loss collector to the ash handling system, all of which worked out very well and has been repeated on subsequent similar installations with equal success.

The Detroit Stoker Co. classifier and low draft loss collector is simple and inexpensive, the draft loss is low and the wear due to erosion is negligible. The collection efficiency where properly applied is high enough so that the carbon loss entailed by disposing of the ash from the dust collector hoppers is negligible.

Much work has been done and is being done, first in the proper furnace and stoker design, so as to hold the flyash leaving the furnace to a minimum and secondly, in the proper arrangement of the cinder return system. Four units are now in the design stages where the matter of reduction of flyash leaving the furnace and the returning of same back to the furnace is being approached from an entirely new angle.

Last month we rebuilt a unit installed in a southern manufacturing plant. The rebuilding program included the installation of our latest design of upper front grate air seals and a coking section at the rear end of the grate.

This unit has now been in continuous service for about thirty days. The excess air at the boiler exit is maintained at 18% at full load and 20% at ⅔ of full load. The color of the gases leaving the stack has the appearance of steam. The cinders from all the hoppers including the dust collector are returned to the furnace. This low rate of excess air and the resultant increase in furnace temperature and reduction of gas weight and velocity have greatly reduced the carryover of flyash and carbon. Operating data collected so far indicates that the cinders from the dust collector can be disposed of to the ash handling system with very little increase in total carbon loss.

The above is a fair cross section of what has been and is being done with the continuous cleaning RotoGrate Stoker in industries having power and process loads. In plants of this type, continuity of service with a minimum amount of outages is of utmost importance. The Detroit RotoGrate Stoker has met this challenge nobly, enabling plants to consistently remain in service for 12 to 18 months without a shut down.

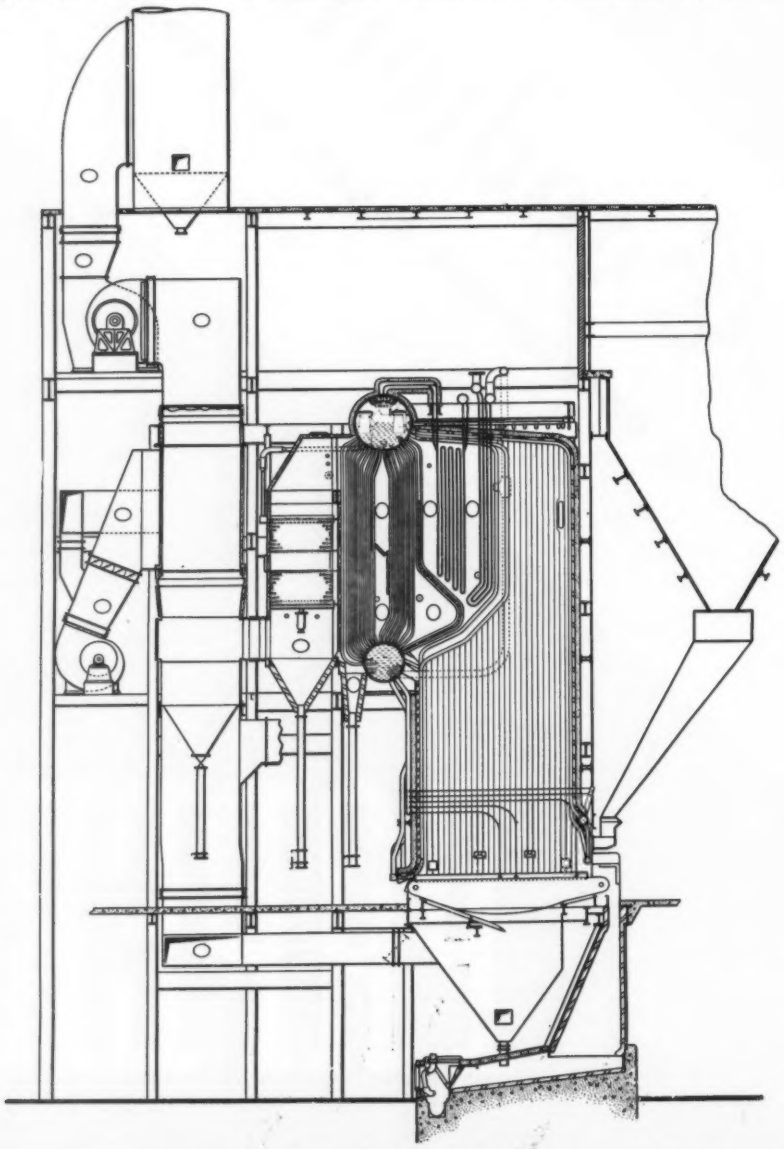
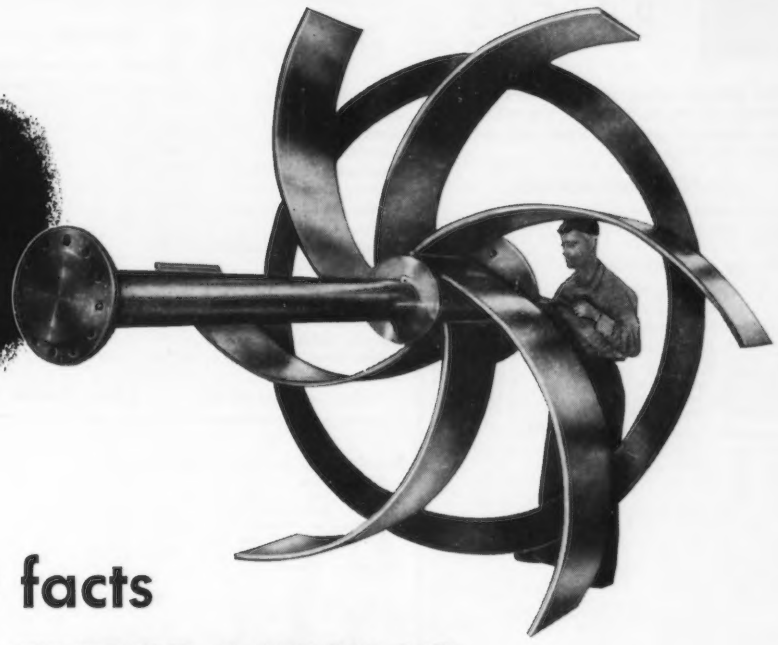


Figure 7

*Presented at the Wisconsin Power Conference and Exposition, Milwaukee, Wis.,

Lightnin® Mixers
SERVE THE PAPER INDUSTRY



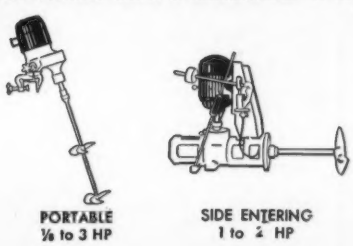
Some new facts on STOCK CHEST MIXING

1. You may not need a specially-designed chest to hold and mix paper stock efficiently. Mixing can be done in a simple vertical cylindrical tank, without baffles, provided the mixer is correctly sized and positioned. For your new plant or your rebuilding program, tremendous savings are possible.
2. There is just one turbine design that shows up as most effective for stock mixing in vertical cylindrical chests. This can be demonstrated. The design, while not yet widely known, is being used in many stock chests, and performance data are available. It is being used in chests as large as 285,000 gallons.
3. There is a definite power threshold at which you get good top-to-bottom turnover of stock in the chest. Additional power merely "swirls" the stock; doesn't mix it. Evidence indicates that many mills are using more power than they need for mixing.
4. You can save up to 65% of installed and operating horsepower—and still get high stock uniformity—by mixing only the *lower* portion of a large stock chest.

MORE AND MORE MILLS are using Lightnin Mixers for stock chest mixing, initial mixing of dye, heat transfer, blending of color and size additives, lime slaking, and other mixing jobs. May we help you cut mixing costs, and get the results you are after? For information, write us today, or mail the coupon for descriptive bulletins.

MIXCO
fluid agitation specialists

EVERY *LIGHTNIN* MIXER IS GUARANTEED TO DO THE JOB *RIGHT*



PORTABLE ⅛ to 3 HP | SIDE ENTERING 1 to 2 HP | TOP ENTERING 1 to 500 HP

MIXING EQUIPMENT Co., Inc.
173 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto

Please send me the literature checked:

- ☐ B-76 Side Entering Mixers
- ☐ B-78 Top Entering Mixers (propeller type)
- ☐ B-75 Portable Mixers (electric and air driven)
- ☐ B-100 Condensed Catalog showing complete line
- ☐ B-102 Top Entering Mixers (turbine and paddle type)
- ☐ DH-50 Laboratory Mixers

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports
Rolls, contract, per ton ..... $116.00/$126.00
Sheets 131.00/ 147.50

Kraft—per cwt. 50# base wgt. OPS Ceiling CPR 88
F.o.b. Southern & Western integrated mills. C.l. Freight allowed up to $10 a ton.

Standard Wrapping, ctr. rolls ..	$7.75/ —
Butchers, counter rolls	8.25/ —
Standard Bag, mill rolls	7.50/ —
Shipping Sack, mill rolls	7.75/ —
Gumming, mill rolls	8.00/ —
Asphalting, mill rolls	7.75/ —
Envelope, Sub. 20, mill rolls	9.25/ —

Tissues—per ream 24x36 (480) 10 lbs. 2500 lbs.

Wh. No. 1 Frd.	$1.90/$2.05
Wh. No. 1 MG	1.90/ 2.05
Wh. No. 1½	1.80/ 1.90
Wh. No. 2	1.60/ 1.65
Kraft Anti-Tar 20-30	1.90/ —
White Anti-Tar 20-30	2.20/ —

Toilet— per case of 100 rolls—1M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5, 650 sheets	6.65/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.81/10.14
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½x4½, 2 ply	$8.95/10.37
4½x5, 2 ply	10.25/10.75

Paper Towels—per case of 3750

Wh. Jr. M'tif'd 9⅛x9½	$6.40
Br. Sr. M'tif'd 9⅞x12	4.40
Br. Jr. M'tif'd 9½x9⅞	3.90
Br. Jr. Sgl. fold 9⅞x10¾	3.95
C-Fold 10⅛ min. x 14 max.	5.90/ 6.64
Blchd. 7½x11, 48/50 rolls	6.80/ 7.92

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets...	$19.55/21.55
Reg. Jute M.F. 40-lb., sheets....	18.50/20.50
Printing Manila	12.00/ —

Gummed Tape—per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$7.20 / —
60-lb. 600 ft. GSI	7.20 / —
35-lb. 800 ft. GSI	8.28 / —
35-lb. 500 ft. GSO	6.21 / —

MARKET WOOD PULP

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Varying freight allowances		On Dock Atlantic Ports		
	*U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$87.00/ 92.50*	$70.00/ 90.00			$80.00/ 85.00
Sulfate, Bleached	142.00/152.50	150.00/160.00	$140.00/150.00		
Semi-bleached Sulfate ..	140.00/ —				
Sulfate, Unbl.	100.00/125.00	100.00/135.00	115.00/120.00	$105.00/135.00	$125.00/ —
Sulfite, Blchd.	140.00/ —	140.00/150.00	140.00/145.00	140.00/ —	140.00/150.00
Sulfite, Unblchd.	125.00/132.50*	140.00/ —	125.00/135.00	125.00/ —	130.00/ —
Sulfite, Unbl'd (Glassine)	132.50/ —	144.00/ —			
Soda, Blchd.	140.00/ —	145.00/ —	130.00/ —		
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwood Screenings .	60.00/ —				
Unblchd Sulfate Sideruns	132.50/ —				
Stand. News. Sideruns..	92.50/ —	85.00/ —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards Deld., per ton (10 tons or over)

Filled News	$90.00/ —
Plain Chip	90.00/ —
Blchd. Mla. L-d. Chip	140.00/142.50
White Pat. coated .020	160.00/162.50
Kr. Liner 42 lb. M sq. ft. $2.47	117.50/ —
Kr. Corr. .009 M sq. ft. $1.59	122.50/ —
Binders Boards	133.00/ —

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4-Ctns.
	per cwt.
100% Rag. Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	**$72.65/$72.80**
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	**40.20/ —**
25% Rag	**33.00/ 34.30**

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.90/$24.65
No. 2	22.40/ 22.85
Machine Coated	
Extra No. 1	$21.35/$21.65
No. 1	19.15/ 19.65
No. 2	16.65/ 17.40
Uncoated	
No. 1 Antique (Watermarked) ...	$19.15/$19.65
Offset	18.15/ 19.15
A Grade E. F.	18.40/ 18.65
A Grade S. C.	18.90/ 19.15
B Grade E. F.	17.40/ 18.15
B Grade S. C.	17.90/ 18.65

‡ Indicates a price change.

WASTE PAPER MARKET

Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) These quotations are a partial indication of the price range in each market on the date specified, as gathered from major dealers. ALL PRICES ARE STRICTLY NOMINAL.

	New York Aug. 20	Philadelphia Aug. 25	Boston Aug. 21	Chicago Aug. 4
No. 1 Mixed Paper	$8.00/ 9.00	nominal	$7.00/ —	$8.00/ —
No. 1 News	14.00/ 16.00	$11.00/ 12.00	12.00/ 13.00	12.00/ —
Over-issue News	18.00/ 19.00	nominal	12.00/ 14.00	15.00/ —
Mill Wrappers	8.00/ 12.00	nominal	13.00/ 19.00	11.00/ —
Corrugated Containers	15.00/ 18.00	13.00/ 14.00	18.00/ 19.00	18.00/ —
Double Kraft Ld. Corr. Cuts ..	30.00/ 37.50	25.00/ 32.50	25.00/ 40.00	35.00/ 37.50
100% Kraft Corr. Cuts	40.00/ 55.00	40.00/ 50.00	35.00/ 45.00	55.00/ —
Used Sugar & Flour Bags	35.00/ 45.00	25.00/ 30.00	25.00/ 35.00	30.00/ —
Super Resorted Br. Kraft	35.00/ 45.00	25.00/ 35.00	20.00/ 35.00	30.00/ —
New Br. Kraft Env. Cuts	60.00/ 70.00	55.00/ 70.00	55.00/ 65.00	70.00/ —
New Br. Kraft Cuts	60.00/ 65.00	50.00/ 60.00	45.00/ 55.00	60.00/ —
No. 1 Gdwd. Shvs.	20.00/ 30.00	15.00/ 25.00	28.00/ 30.00	22.00/ —
White Newsblanks	65.00/ 75.00	65.00/ 75.00	40.00/ 50.00	45.00/ —
No. 1 Flyleaf Shvs.	45.00/ 50.00	25.00/ 35.00	25.00/ 42.50	30.00/ —
No. 1 Soft Wht. Shvs.	75.00/ 85.00	60.00/ 70.00	75.00/ 85.00	75.00/ —
Super Soft Wht. Shvs.	85.00/ 95.00	70.00/ 75.00	95.00/100.00	85.00/ —
Hd. Wht. Shvs.	92.50/105.00	90.00/105.00	85.00/100.00	90.00/ —
Hd. Wht. Env. Cuts	115.00/125.00	110.00/120.00	105.00/120.00	100.00/ —
New Manila Env. Cuts	60.00/ 70.00	60.00/ 75.00	60.00/ 70.00	40.00/ —
Col. Tab. Cards	43.00/ 48.00	43.00/ 48.00	40.00/ 50.00	45.00/ —
Manila Tab. Cards	70.00/ 75.00	60.00/ 70.00	60.00/ 65.00	60.00/ —
No. 1 Mixed Ledger	40.00/ 45.00	40.00/ 45.00	35.00/ 45.00	45.00/ —
White Ledger	55.00/ 60.00	50.00/ 55.00	50.00/ 55.00	60.00/ —
No. 1 Book & Mag.†	16.00/ 18.00	18.00/ 24.00	18.00/ 28.00	15.00/ —
No. 1 Rep'd. Hvy. Books‡	26.00/ 35.00	30.00/ 35.00	30.00/ 37.50	27.50/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood. § Deld.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28 *
Delivered Mill Basis

No. 1 White Shirts	$17.00/$21.00*
No. 1 Unblchd. Muslins	18.50/ 21.00*
Blchd. & Unblchd. Underwears ..	17.00/ 21.00*
Blchd. Canton Flannels	15.50/ 21.00*
No. 1 Light Silesias	13.25/ 16.00*
No. 1 Light Prints	8.75/ 11.50*
No. 1 Blue Overalls	11.75/ 14.50*
Suntan Khakis	9.00/ 11.50*
Fancy Shirts	7.75/ 10.00*
Indigo Blues	7.50/ 10.00*
Mixed Khakis	6.00/ 8.00*
Corduroys	7.00/ 8.00*
Cottonades	6.75/ 8.00*
No. 1 Washables	5.25/ 6.50*

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$3.50/$4.50
Cotton Pants & Overalls	3.00/ 4.00
Thirds and Blues, Repacked	2.50/ 3.00
No. 1 Roofing Rags	1.00/ 1.10
No. 2 Roofing Rags	.90/ 1.00

Bagging
(Prices to Dealers, F.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.00/$5.25
Heavy Wool Tares	5.00/ 5.25
Foreign Scrap Burlap	4.25/ 4.50
Austr. Wool Pouches	6.00/ 7.00
Domestic Manila Rope	7.00/ 7.50
No. 1 Sisal Strings	6.50/ 7.50

COTTON LINTERS

Memphis Market
F.o.b. Oilmills

		cents per lb.
Grade 2		13.00/ 11.75
3	1st cut	11.50/ 10.00
4		9.25/ 8.25
5		7.75/ 6.50
6	2nd cut	6.00/ 5.50
7		5.50/ 5.50

PRICES OF MATERIALS

Aluminum sulfate:		
comi. nags, wks. ..... cwt.	1.65	
iron-free. c.l.	3.25	
Alcohol, ethyl:		
tax free, dms. c.l. ..... gal.	1.01	/ 1.05½
deld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms.		
c.l. fit. alld. ..... gal.	.44	
Casein, acid prec.:		
dom. sh. pt. c.l. ..... lb.	.28	/ .38
imp. ex. dock ..... lb.	.17½	/ .23
Caustic soda:		
c.l. wks. solid, 76% cwt.	3.35	
flak. & grd. 100-lb. drums...	3.75	
liquid 50% tanks....	2.55	
liquid 70% tanks....	2.65	
China clay:		
dom. air-float. c.l. wks. ton	10.00	
water-washed, lump. filler....	11.00	
coating	17.60	/30.50
imported, ex whse...short ton	15.20	/28.35
Chlorine:		
single-unit tanks, works..cwt.	2.70	
multi-unit ..... cwt.	3.20	/ 4.40
Formaldehyde:		
USP, inh. dms, c.l. wks.... lb.	.0625/	.0675
l.c.l., E. wks.	.0675/	.0725
Fuel oil:		
Bunker C, No. 6 hvy. tanks, N.Y. harbor ..... bbl.	2.10	/ —
light, tanks, refinery ..... bbl.	2.00	/ 2.25
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss. lb.	.23½	/ .26½
Lime:		
hydrated, bags, wks. ..... tons	13.50	
Rosin:		
B gum, drms, c.l. Savan..cwt.	7.00	/ —
K, M, N ..... cwt.	7.33	/ 7.35
FF, wood, do. ..... cwt.	4.31	/ 6.30
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt..... cwt.	6.25	/ 6.30
Salt cake:		
dom. bulk, c.l. wks..... ton	17.00	
wks. frt. all..... ton	20.00	/22.00
Soda ash:		
light, 58%, bags, wks.....	1.50	
bulk ..... cwt.	1.20	
Sodium silicate, 40°:		
turbid. c.l. wks..... cwt.	1.30	/
l.c.l. wks.	1.60	/ 1.85
Sodium peroxide:		
dms. c.l. E. of Miss..... lb.	.21	
l.c.l. do. ..... lb.	.21½	/ .22
Soybean, protein:		
chem. isol, wks, c.l., bags..lb.	.23½	/ .24¼
Cinn. and Chic.		
Sulfuric acid:		
60° Be. cbys. c.l. wks.....cwt.	1.75	/ —
l.c.l. wks. ..... cwt.	2.05	/ 2.85
Sulfur:		
crude, c.l. mines, contract, long ton	21.00	/22.00
f.o.b. vessels Gulf	22.50	/23.50
Sulfur dioxide:		
liquid, coml. cyl. wks..... lb.	.09	
multi-unit cars ..... lb.	.0535	
Starches:		
pearl corn, bags, c.l. wks...cwt.	6.59	/ —
white dextrines, c.l. wks...cwt.	7.97	/ —
potato, Idaho, c.l. wks....cwt.	nominal	
potato, Maine, c.l. wks....cwt.	nominal	
tapioca, conv. dextrines...cwt.	nominal	
Talc:		
domestic, 50-lb. sacks, c.l. wks. ..... ton	25.00	/30.00
Titanium dioxide:		
anastase, c.l. deld., bags...lb.	.21	/ .21½
l.c.l. deld. ..... lb.	.22	/ .22½
rutile, c.l. deld. ..... lb.	.23	/ .23½
l.c.l. deld. ..... lb.	.24	/ .24½

Publications

American Handbook of Synthetic Textiles. (Book—First Edition) A practical text and reference book by Herbert R. Mauersberger and 22 collaborators, it depicts American practice only and does not cover any European fibers or practices. 1218 p., 430 tables, charts, and flowsheets. Textile Book Publishers, Inc., 303 Fifth Avenue, New York 16, N. Y. Price $10.30.

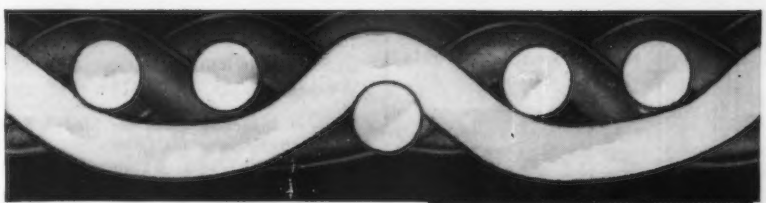
Celite, the Story of How Johns-Manville Puts the Diatom to Work. (16 mm, 36 minutes, sound film) A full-color, narrated motion picture about the origin, mining, processing and uses of Diatomite. May be borrowed without charge from any of the 17 Johns-Manville sales offices located throughout the United States and Canada. Johns-Manville, 22 East 40th street, New York 16, N. Y.

CMH Flexible Metal Hose. (Catalog CMH-130) Also covers coupling types, special assemblies, and installation information. Flexonics Corp., 1414 South Third Avenue, Maywood, Ill.

Complete New Line of Sier-Bath Screw Pumps. (Reply sheet) Sales copy with technical details, illustrated. Sier-Bath Gear & Pump Co., Inc., 9252 Hudson Blvd., North Bergen, N. J.

Lindsay Longcrimp

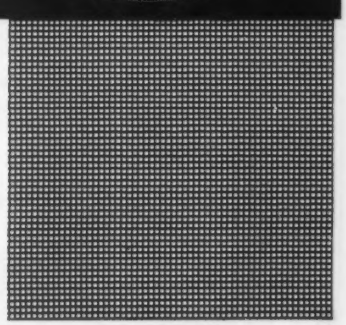
FOURDRINIER WIRE CLOTH



pioneered by

LINDSAY in 1922

—long since standard in the paper-making industry



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INCORPORATED
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GARTEX
Returnable and Non-Returnable extra strong mill core for regular and special needs.

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TRENTON, NEW JERSEY
NEW YORK OFFICE—500 5th AVE.

Finest Industrial Heaters for Your Plant. (Catalog NGC-10-52) Features a full-color cutaway illustration of a Thermobloc direct-fired heating unit. Thermobloc Div., Prat-Daniel Corp., 2 Meadow street, South Norwalk, Conn.

For Better Roads. (Booklet) Tells story of the use of sulphite waste liquor. Illustrated. Felker Bros. Mfg. Co., Marshfield, Wis.

How You Can Avoid Boiler Tube Corrosion. (Bulletin TR-514) Article by H. F. Hinst, reprinted from *Heating, Piping & Air Conditioning,* March 1952. Offers a number of general rules to follow to get maximum service life for boiler tubing. Tubular Products Div., Babcock & Wilcox Co., Beaver Falls, Pa.

Hild Floor Machines. (Circular) Explains the operation of the patented Hild Shower-feed Brush and provides specifications for six different models. Hild Floor Machine Co., 740 West Washington Boulevard, Chicago 6, Ill.

Ketchikan Pulp Project. (Booklet) Furnishes comprehensive statement of the historical background, present plans and future purposes of Ketchikan Pulp Company at Ward Cove, adjacent to Ketchikan, Alaska. Puget Sound Pulp & Timber Co., Bellingham, Wash.

Measurement of the Thickness of Capacitor Paper. (National Bureau of Standards Circular 532) Circular by Wilmer Souder and S. B. Newman contains statistical analysis of results obtained in a number of laboratory measurements made at NBS; also suggestions to guide other laboratory workers in dealing with the problem. Order from U. S. Government Printing Office, Washington 25, D. C. Price 15 cents.

Table of Detection Limits for Models B and Du Spectrophotometers. (Data Sheet 16-2) These limits are for aqueous solutions and have been compiled on the assumption that an increment of 1 percent above the background radiation can be detected. Data given for various models and fuel mixtures, i.e., natural gas-oxygen-air, oxygen-hydrogen and oxygen-acetylene. Lists in simplified tabular form such elements as most useful wave lengths for flame photometry detection of such elements as Barium, Boron, Calcium, Potassium, and many others. Beckman Instruments, Inc., South Pasadena, Calif.

Polyphase Induction Motors. (Bulletin 37-200) Photographs show many special designs of high-horsepower motors. Electric Products Co., 1725 Clarkstone Road, Cleveland 12, Ohio.

Precision Snap-Action Switches. (Catalog No. 82) Covers safety, limit, and interlock switches designed especially for switching a-c circuits in industrial and commercial applications; also technical data and application ideas. *Micro,* Div. of Minneapolis-Honeywell Regulator Co., Freeport, Ill.

Simplified Practice Recommendation R146-52, Corrugated and Solid Fiber Boxes for Canned Fruits and Vegetables. (Bulletin) Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price: 5 cents per copy.

125th Anniversary — 1827 — John Waldron Corp.—1952. (Booklet) Illustrated commemorative booklet telling: (1) The Story of Waldron; how one of America's industrial pioneers founded a business that has helped to build many of our present major industries; (2) Waldron today . . . in the major industrial fields being served; (3) Famous Waldron "Firsts" are a record of the major developments in the converting industry. John Waldron Corp., New Brunswick, N. J.

FINANCIAL

Great Lakes Paper Co., Ltd., for six months ended June 30, 1952, operating profit amounted to $4,094,969 as against $5,256,632 in same period of 1951 and net profit dropped to $1,429,077 against $2,089,518.

Lee Paper Co. proposes to increase its authorized capital stock by 30,000 shares. At present the authorized capital structure consists of 100,000 shares of common stock at $10 par value. The new stock would be of the same par value.

Donohue Bros., Ltd., Quebec, estimates net profit of $296,533 for the first six months of 1952 compared with $428,160 for the same period of last year. Estimated consolidated earnings of the company and its wholly-owned subsidiary, Donohue Bros. Sales Corp., for the 1952 period amount to $641,377 after depreciation but before income tax. For the first half of 1951, earnings on a similar basis were $903,291. Provision for income tax was $344,843 against $475,131.

Gaylord Container Corp. has declared a dividend of 37½ cents a share on its common stock payable September 10 to shareholders of record September 2.

International Paper Co. has declared the regular quarterly dividends of $1 per share on the cumulative $4 preferred stock and 75 cents per share on the common stock. Both dividends are payable September 22 to holders of record August 22.

Puget Sound Pulp & Timber reports net income of $1,413,820 or $1.81 a share for the first six months of 1952. This compares with $2,315,679 or $2.97 in the first half of last year, and with $1,263,244 or $1.63 a share in the second half of the year 1951.

Net sales and other income reported totaled $10,914,957 in the first half of this year, compared with $12,987,877 in the first half of 1951, and with $10,299,351 in the second half.

Federal taxes on income, the report states, took $2.4 million, or 63 cents of every dollar of earnings.

Paper Trade Journal SUPPLIERS

W. R. Shook

ELECTRIC MACHINERY MFG. CO., Minneapolis, Minn., has appointed W. R. Shook as manager of the new E-M Southeast District office at Room 401, Georgia Savings Bank Bldg., 84 Peachtree St. N.W., Atlanta 3, Ga.

ARTHUR D. LITTLE, INC., consulting industrial research and engineering firm of Cambridge, Mass., has opened a mid-west office in St. Louis Mo. The branch, located in the Railway Exchange Building, Room 2074, will serve as a base for the organization's technical survey work in economics and market research in the mid-west.

FARREL-BIRMINGHAM has transferred Elmer F. Myers, sales engineer, to Fayetteville, N.C. Mr. Myers, who has been covering the New England territory from the F-B home office at Ansonia, Conn., will now handle the sale of the company's machinery in Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida and Alabama.

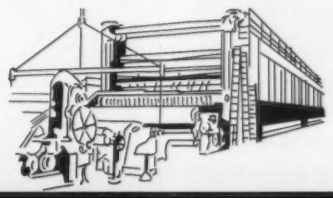
BLACK-CLAWSON CO. has been licensed under Cowles patents to build three major pieces of Cowles Co. equipment—Aquapulpers, Beatapulpers and Classapulpers. These machines are being built and sold by Shartle Brothers Division at Middletown, Ohio.

The first Beatapulper built by Shartle licensing agreement has been installed at the Miamisburg Box Board Division of Interstate Folding Box Co., Miamisburg, Ohio.

The Beatapulper is a new unit that pulps, defibers and refines paper stock all in one operation.

The installation at Miamisburg has replaced the beaters previously used in the top and underliner systems. This unit processes 2000 lb. batches of clean furnish on a 60 minute time cycle at 5 percent consistency.

FOOD MACHINERY & CHEMICAL CORP., New York, N.Y., has elected Ernest Hart, formerly a vice-president of F.M.C. and president of its Niagara Chemical Division, an executive vice-president of the corporation. He will be responsible for supervising and coordinating the operations of all F.M.C. chemical divisions. These now include Buffalo Electro-Chemical Division, Buffalo, N.Y.; Niagara Chemical Division, Middleport, N.Y.; Ohio-Apex Division, Nitro, W. Va., and Westvaco Chemical Division, New York, N.Y. Mr. Hart will make his headquarters at Food Ma-



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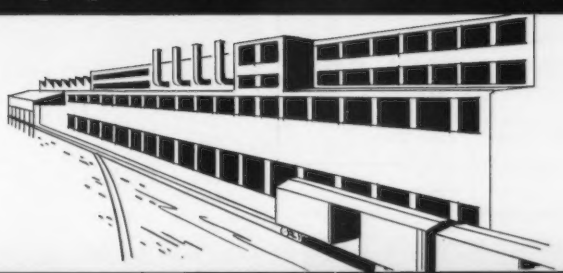

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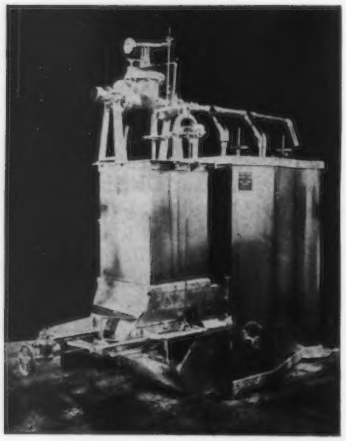

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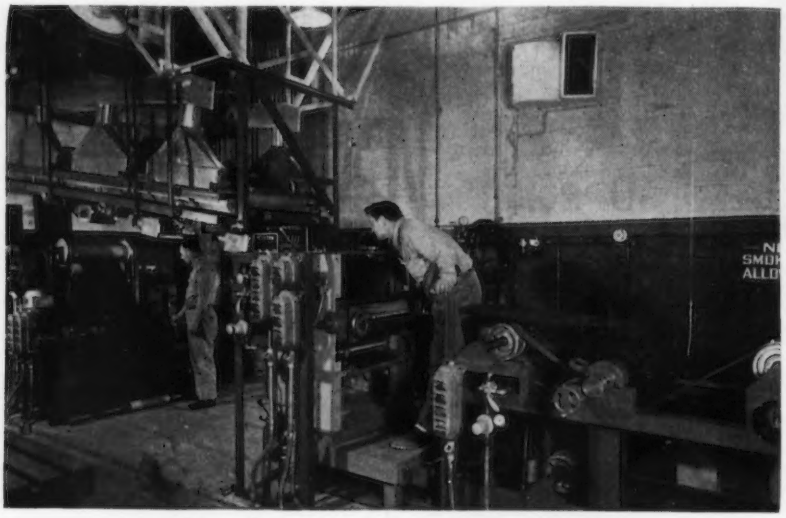
chinery and Chemical Corp., Chrysler Building East, New York. J. C. Vernon, previously vice-president and sales manager of the Niagara Chemical Division succeeds Mr. Hart as president and manager of that division with headquarters at Middleport, N. Y.

DU PONT'S Dyes and Chemicals Division and Rubber Chemicals Division will move the main West Coast office on September 1 to 845 East 60th street, Los Angeles, Calif., with A. J. Mease as manager.

Customers in the San Francisco area may continue to direct inquiries to 111 Sutter street, San Francisco, and customers in the Pacific Northwest to the Du Pont sales office at 1238 N.W. Glison street, Portland, Ore.



New Coating Laboratory at Dilts

A complete coating laboratory is available for pilot plant scale trial purposes, and production of commercially equivalent coated products at the Dilts Machine Works, Fulton, N. Y., division of the Black-Clawson Co. . . . The new Dilts "Contracoater" reverse roll coating machine together with constant tension unwind and wind, oven and after-cooling, will handle webs up to 18-inches in width and will produce commercially equivalent coatings on paper, foil, film, fabric or other web materials. . . . Coating materials that have accurately and evenly been applied range from low solids lacquers of dry film thickness of .00015 inch up to plastisols fused to a thickness of .020 inches in one pass. Viscosities have ranged from water emulsions up to rubber cements of .75,000 centipoises. . . . Coatings successfully applied include lacquers, lattices, organisols, plastisols, emulsions, dispersions, rubber cements and resins with various types of fillers. . . . The coating laboratory is under the supervision of George Nicholson, director of laboratories of Black-Clawson Co., and is operated by a trained technical staff including E. G. Paxton, coating specialist and chemical engineer.

NEWS OF ASSOCIATIONS

Plant Maintenance Conference

Sixty-six separate sessions on maintenance problems, by far the most exhaustive treatment of the subject ever undertaken, have been scheduled for the Plant Maintenance Conference, which will be held at the Public Auditorium, Cleveland, January 19-22, inclusive.

Maintenance problems in 11 industries will come in for special discussions, including paper mills and paper products.

Separate conferences also will be held for maintenance problems in small, medium and large plants. These groupings will be according to the number of maintenance employes and will range from 1-50 maintenance employes, 51-100, 101-300, 301-800, and over 800. Similarly, plant engineering problems will be discussed in separate groups, divided according to the number of maintenance employes engaged in the work.

Panel discussions, involving top management policy, will include "Planning and Scheduling Maintenance Work," "Maintenance Costs and Budgets," "Training Maintenance Workers and Supervisors," "Work Standards and Measurements" and "Growing Pains of an Engineering-Maintenance Organization."

Other topics to which conferences will be devoted include organization, operating policies, preventive maintenance, building maintenance, mechanical equipment, electrical equipment, power plant equipment and prevention and control of corrosion.

AMA Plans Personnel Conference

The American Management Assn. will open its 1952-53 conference season

with a three-day personnel conference to be held at the Hotel Astor, N. Y., September 29 to October 1. Approximately 1,500 industrial relations executives and other representatives of manpower management from all parts of the U. S. are expected to attend the meeting — the first of twelve national conferences to be held by the eight divisions of A.M.A. during the coming year.

A total of thirty-five speakers, panel members and discussion leaders will highlight current developments in industrial relations, including the political implications of labor relations, gerentology (problems of the maturing workforce), management development and various elements of personnel administration.

N.Y.-Canadian Supts. Saranac Lake Program

September 18

10:00 a.m.–6:00 p.m.—Registration
(Registration must be made at the Association desk before rooms are assigned)

9:00 Informal Get-together Party in the Casino—Guests of the Suppliers.

September 19

9:00 a.m.—Registration

9:30 a.m. Business Meeting in the Casino.
(Punctuality prize awarded at 9:45 a.m. for which Superitendents only, are eligible.)
C. B. Davies, Chairman
E. B. Eddy, Limited

1. Opening Remarks—Chairman
2. Development and Use of Wet-Strength Resins, T. S. Morse, Hercules Powder Company
3. Experiences with the Use of Wet-Strength Resins by Four Operating Mill Representatives.
4. Open Discussion

1:00 p.m.—Luncheon

2:00 p.m.—Mill Visits

2:30 p.m.—Trap Shooting
(M. S. Ames, Remington Arms Co. will assist H. D. Cook.)

7:00 p.m.—Dinner in Main Dining Room

9:30 p.m.—Entertainment and Dance in the Casino

10:00 p.m.—Testimonial to G. Earl Osterheldt

September 20

9:30 a.m.—Business Meeting in the Casino
(Punctuality prize awarded at 9:45 a.m. for which Superintendents only, are eligible.)
R. E. Grey, Chairman

1. Opening Remarks—Chairman
2. Approach Flow to Forming Units, Allen A. Lowe, Sandy Hill Iron & Brass Works
3. New Improvements on High Speed Fourdrinier, Wesley Corbin, The Bagley & Sewall Company
4. Open Discussion
5. Annual Meeting and Election of Officers of the New York-Canadian Division, C. E. Reynolds, Chairman
Nominating Committee: D. R. Dick, G. E. Osterheldt, G. E. Rausch

12:00 Noon—Luncheon in Main Dining Room

1:30 p.m.—Golf—Saranac Inn Course

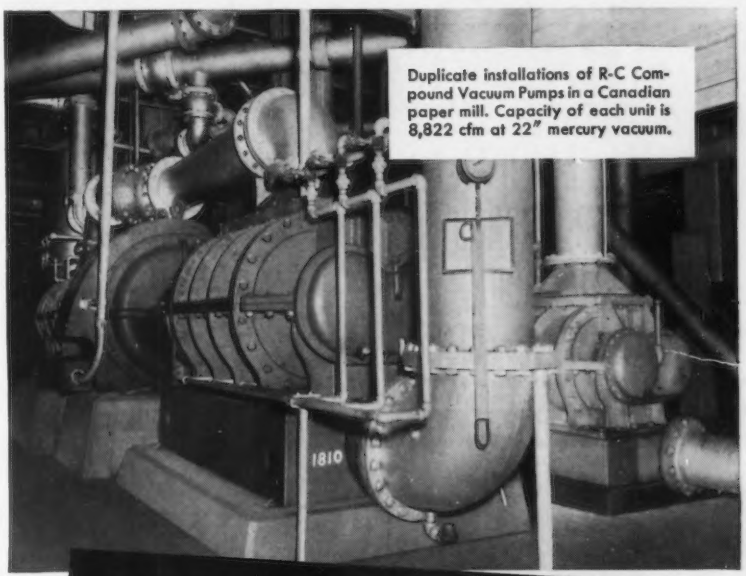
6:30 p.m.—Chairman's Cocktail Party in Main Lounge

7:30 p.m.—Banquet in Main Dining Room—G. E. Osterheldt, Toastmaster; Introduction of New Officers

9:30 p.m.—Dancing in the Casino—Awarding of Golf Trophies, Donated by Stebbings Engineering and Manufacturing Co. and Ciba Co., Ltd.
Awarding of other prizes.

Metropolitan TAPPI

October 14 will be the starting meeting of the season of the Metropolitan Group Empire State Section TAPPI. The meetings will be held at Fraunces Tavern, Pearl and Broad Streets, New York City.


Duplicate installations of R-C Compound Vacuum Pumps in a Canadian paper mill. Capacity of each unit is 8,822 cfm at 22" mercury vacuum.
1810

LESS WEIGHT...LESS FLOOR SPACE with R·C Vacuum Pumps

Compactness of the simple rotary positive design of Roots-Connersville Vacuum Pumps, together with higher operating speed (600 rpm), bring substantial reduction in weight and floor space for any required capacities. This means lower installation costs.

You save on motors and power, too. In a specific case, motors cost $20,000 less. In another, 200 less motor horsepower was called for.

These cost reductions would be useless, however, without the long-proved reliability and low maintenance of R-C equipment. Combined, these advantages explain why so many paper manufacturers are calling upon Roots-Connersville for their pump requirements. Ask for details in Bulletin 50-B-13 and consult us on your problems.

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Nat'l. Safety Congress Program Pulp & Paper Section—1952

October 20

Sheraton Hotel—Tally-Ho Room

2:00 p.m.—*Progress Report*
General Chairman H. B. Goodrich, Maintenance & Safety Engineer, Strathmore Paper Company, West Springfield, Mass.

2:30 *Report of Nominating Committee*
J. Fred Berry, Personnel Manager, Alton Box Board Co., Alton, Ill.

2:45 *Election of 1952-53 Officers*

3:00 *Award of Edward Benton Fritz Trophy*
To be announced.

3:30 *Address*
G. W. E. Nicholson, Vice-President in Charge of Manufacturing, Union Bag & Paper Corp., New York, N. Y.

5:00 *Meet Your Neighbor Hour*

October 21

Sheraton Hotel—Tally-Ho Room

Presiding: A. E. Minor, Safety Supervisor, The Ontario-Minnesota Pulp & Paper Co., Ltd., Kenora, Ontario, Can.

2:00 p.m.—*The Workmen's Compensation Board and You*
D. D. McRae, Assistant Secretary-Treasurer, The Ontario-Minnesota Pulp & Paper Company, Ltd., Fort Francis, Ontario, Canada.

2:30 *Discussion*

2:40 *Address* — Title to be announced.
Allan L. Cobb, Director of Safety and Fire Prevention, Eastman Kodak Company, Kodak Park Works, Rochester, N. Y.

3:10 *Discussion*

3:20 *Unusual Accidents*
R. W. Gray, Safety Director, Union Bag and Paper Corporation, Savannah, Ga.

3:50 *Discussion*

October 22

Sheraton Hotel

ROUND TABLE DISCUSSIONS

2:00 p.m.—*Sulphite Pulp Manufacturing, Room 815*
Presiding: O. Hazen, Safety Supervisor, Minnesota & Ontario Paper Co., International Falls, Minn.
Recorder: R. W. Croucher, Safety Officer, Minnesota & Ontario Paper Co., International Falls, Minn.

2:00 *Sulphite Pulp Manufacturing, Rooms 809-810*
Presiding: D. V. Hill, Safety Director, The Mead Corporation, Kingsport, Tenn.
Recorder: F. O. Soughton, Service & Safety Supervisor, Long-Lac Pulp & Paper Co., Ltd., Terrace Bay, Ontario, Canada.

2:00 *Paper Converting, Rooms 811-812*
Presiding: A. O. Vranek, Safety Director, Container Corp. of America, Chicago, Ill.
Recorder: R. G. Belknap, Safety Inspector, Bemis Brothers Bag Co., St. Louis, Mo.

October 23

Luncheon at 12:30 p.m., Sheraton Hotel, Tally-Ho Room

Presiding: C. L. R. Dougherty, Ass't Manager of Industrial Relations, Union Bag & Paper Corp., Savannah, Ga.

October 23

Sheraton Hotel

ROUND TABLE DISCUSSIONS

2:00 p.m.—*Paper Manufacturing, Room 815*
Presiding: Francis H. Wagner, Director of Safety, The Mead Corp., Chillicothe, Ohio.
Recorder: C. R. Johnston, Personnel Director, Cornell Paperboard Products Co., Cornell, Wisconsin.

2:00 *Pulpwood Logging, Room 811-812*
Presiding: H. H. Jefferson, Training Officer, American Pulpwood Association, New York, N. Y.
Recorder: Seth Jackson, Safety Officer, U. S. Forest Service, Washington, D. C.

2:00 *Insulation Products, Room 809-810*
Presiding: H. M. Jackson, Safety Engineer, The Johns-Manville Corp., New York City.
Recorder: B. J. Lee, Safety Director, Wood Conversion Co., Cloquet, Minn.

Executive Committee Meeting

The Executive Committee Meeting will be held on Tuesday morning, October 21, in Room 811-12 at the Sheraton Hotel. The past and the newly elected executive committee members are reminded to attend.

It will speed the reply to your inquiry to mention Paper Trade Journal.

GOVERNMENT DOINGS

Canada's Sulfur Outlook

OTTAWA—With the grapevine in the pulp and paper industry of Canada reporting now that more sulfur may be coming to this country from the United States than believed likely earlier in 1952 due to a better production record as well as a lower consumption level in United States, the whole sulfur supply situation in Canada is much brighter now since well-informed sources here forecast that this greater United States supply will combine with some specific progress in more production by Canada's own sulfur sources, particularly as a direct result of new sources of supply created in this country or at least started this year.

Indeed, in the long run Canada may become self-sufficient in such sulfur within a comparatively short time, judging from the exceptionally good progress being made by several large companies. The only possible slow down of this ambitious program may be the shortage of steel since it is already whispered in pulp and paper industry that the six pyrites roasting plants which pulp and paper companies are working on at the present time have run into problems due to steel shortages and some other difficulties. However, these problems may be solved now that the steel strike is history and pipelines of supply are beginning to be filled, though there is little doubt that some slow down in such program cannot be ruled out as a certainty.

Nevertheless, Canadian companies are going ahead with their plans to make Canada self-sufficient in sulfur and the shortages may be only immediate and as early as 1953 may witness a considerable change in this sulfur situation as far as being dependent upon United States supplies are concerned. Two large pulp and paper companies, in addition to the six already known to be establishing pyrites roasting plants this year, are reported to be drawing up extensive plans for new pyrite plants which will make them relatively independent of outside sulfur needs to meet their own requirements. During the threatened shortage period of the past few months, such pulp and paper companies were forced to dig into their stockpiles which dwindled down dangerously. This, combined with a steady flood of reports from United States suppliers that there could be no full guarantee of future supplies, caused executives of the Canadian companies to consider seriously what could be done about sulfur supplies so that there would be no constant threat of stoppage of operations in their mills from this troublesome condition. This brought important decisions that, despite the cost and investment, companies in Canada might be wise to go ahead with extensive plans to get their own sulfur produced.

On top of these independent decisions of the pulp and paper firms, other Canadian companies also moved ahead their plans to produce sulfur and the whole program has been greatly accelerated to make Canada fully self-sufficient.

A very encouraging report is that Defense Department officials in Ottawa are looking with favor on these new projects which may get the "green light" on material priorities to help out the whole program. This should cause the ultimate objective of self-sufficiency to be attained in much quicker time than it is generally realized in the United States. The immediate plans call for Canadian sources to supply a fairly large proportion of the sulfur needs within a comparatively short period, though up to the present Canada's pulp and paper industry has had to depend on United States imports which last year alone amounted to approximately 396,000 long tons, most of which went to the pulp and paper companies.

A little over one-third of Canada's total sulfur requirements are derived from pyrites and smelting of sulfide ores but presently known plans call for expansion of sulfur output from smelter gases, refinery and natural gas, and iron sulfide. One nationally known Canadian expert recently told the Chemical Institute of Canada at a gathering in Montreal that the "current sulfur shortage may be overcome if the present trend is maintained in expansion of production of sulfur from smelter gases, refinery and natural gas, and iron sulfide."

The new Canadian sulfur-producing projects include, according to this expert, the following: Abitibi Power & Paper Co., Ltd., Ontario, pyrites, annual capacity 5,000 tons; Aluminum Co. of Canada, Quebec, zinc concentrate, 21,000; Bywater Newfoundland Pulp, Newfoundland, pyrites, 13,000; Canadian Industries Ltd., Copper Cliff, Ont., smelting gases, 45,000; Columbia Cellulose, British Columbia, pyrites, 13,000; Consolidated Mining & Smelting Co., Trail, B. C., pyrites tailing, 60,000; Consolidated Paper, Quebec, pyrites, 5,000; Donnacona Paper, Quebec, pyrites, 7,000; Noranda Mines, Quebec, pyrites, 52,000; Price Bros., Ltd., Quebec, pyrites, 5,000; Royalite

HERE'S A NEW, EXTRA-TOUGH, ECONOMICAL INDUSTRIAL SHEET LINING

Especially designed to protect against extremely corrosive conditions, Amer-Plate is particularly adaptable for use in highly corrosive sewers, chemical storage tanks, tank cars and tank trucks hauling unusually corrosive solutions.

Composed of inert resins and plasticizers, Amer-Plate is impervious to gases, highly resistant to acids, alkalies, alcohol, oils, salts, and petroleum products. It has a very low moisture vapor transmission rate, will not support combustion, and contains no toxic materials.

Amer-Plate is a flexible thermoplastic sheet, practical for application to flat, curved, and angular surfaces. Its economy and effectiveness has been proved in the field in over 10 years of development and testing.

This remarkable sheet lining is available in two convenient types: Plain AMER-PLATE for existing steel or concrete tanks or structures and T-Lock AMER-PLATE for newly cast concrete pipe and structures.

So...wherever you require long lasting protection against extreme corrosion, make a full investigation of the possibility of using Amer-Plate. Write for complete information.

Amer-Plate industrial sheet lining is the result of many years experience in the manufacture and application of Amercoat protective coatings.

AMERCOAT CORPORATION
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Oil Co., Alberta, natural gas, 10,000; and Shell Oil of Canada, Alberta, natural gas, 10,000; Total, 246,000 tons.

These new projects and others contemplated by a number of large companies may eventually bring relief to the sulfur-hungry pulp and paper industry of Canada.

Set Steel Strapping Goal

WASHINGTON, D. C. — An expansion goal for steel strapping has been set at 550,000 tons capacity by January 1, 1955, 150,000 tons over January, 1951, of which about 52,000 tons is still open for issuance of C/N's, NPA has reported.

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PAPER

NORDICUS INCORPORATED

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SELLING AGENTS

Forest Products Laboratory for Manila, P. I.

OTTAWA — The Mutual Security Agency in Manila has announced an allocation of $217,000 to establish a modern forest products laboratory, patterned after the one at Madison, Wis.

The project calls for the construction of a laboratory building at the University of the Philippines College of Agriculture and Experimental Station at Los Banos. It is to be equipped with modern instruments and wood-processing machinery.

CMP Authorizations for Paper Industry Expansion

WASHINGTON, D. C. — Third quarter CMP materials authorized for containers and packaging cover 4 projects with a total estimated cost of $1,176,800, NPA reported this week.

Authorizations were approved for five pulp and paper expansion projects aggregating $50,003,060.

Change Dates on Bids and Awards

WASHINGTON, D.C.—The Joint Committee on Printing has changed the original date for opening bids for paper for the quarter beginning October 1, to September 16. Awards will be announced September 26, under the altered schedule.

OBITUARIES

Parker L. O'Donnell, 86, for many years superintendent of the International Paper Co.'s mill at Livermore Falls, Maine, died August 15. He held that position from 1908 until 1941, when he retired because of ill health. He was a native of Woodstock, N. B.

Cornelius M. Major, 64, for 35 years superintendent of the Chemical Paper Manufacturing Co., died August 15, at a Boston, Mass., hospital. He was a native of England and was a member of the Papermakers Superintendents Assn. He was also prominent in Masonic organizations.

Bernard R. VanDervoort, for 25 years a sales representative of the L. L. Brown Paper Co., Adams, Mass., died in Rochester, Minn., on August 18 after a long illness.

Mr. VanDervoort became associated with the L. L. Brown company in 1927 and had confined his work to the company's Mid-western territory, where he was very well known in the paper and allied trades, as well as among public officials and other consumers of paper.

AMERICAN PULP AND PAPER ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 19	July 26	Aug. 2	Aug. 9	Aug. 16
1952	86.6	88.1	85.0	88.1r	86.3
	July 21	July 28	Aug. 4	Aug. 11	Aug. 18
1951	99.5	99.4	98.9	100.1	97.1

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1951	99.3	101.3	101.9	102.8	102.2	100.1	88.6	97.7	94.3	100.3	98.0	90.0	98.0
1952	97.1	97.8	95.1	90.6	89.4‡	88.7‡	75.5‡						

COMPARATIVE YEARLY SUMMARIES

	1945	1946	1947	1948	1949	1950	1951	1952
Year to Date	87.8	99.9	103.7	97.5	85.5	94.9	99.8	90.4
Year Average	85.4	96.9	101.7	92.1	83.7	95.8	98.0	

‡ Preliminary.
r Revised.

PAPERBOARD OPERATING RATIOS†

	July 19	July 26	Aug. 2	Aug. 9	Aug. 16
1952	80	82	84	89	89
	July 21	July 28	Aug. 4	Aug. 11	Aug. 18
1951	94	97	94	94	93

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1951	102	105	104	105	104	103	84	94	86	87	82	75	94
1952	81	86	85	82	82	82	71						

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

Note: In the above tables *all* the ratios shown are on the basis of a normal 6 and 7 day capacity.

† Per cents of operation based on "Inch-Hours" reported on a 6-day basis to the National Paperboard Association.

Paper Trade Journal CLEARING HOUSE

HELP WANTED

SALES ENGINEERING ASSISTANT TO DIVISION HEAD

We need young man—graduate engineer—preferably now connected with maintenance department of large pulp and paper plant.

— Unusual Opportunity —

Send detailed application with photo to: Box 52-366 care of Paper Trade Journal. S-12

PAPER MILL ENGINEERS

The Great Northern Paper Company, Millinocket, Maine is starting a major plant expansion of pulp, power and paper facilities.

Permanent positions are open in the Engineering Department for engineers qualified to take responsibility for design of different sections of the new construction.

If interested send detailed resumé of experience and background to:

Chief Engineer,
Great Northern Paper Company,
Millinocket, Maine.

A-29

PAPER SALESMAN (SPECIALTY)

Large established paper converter in NYC area is seeking a representative with following in packaging field such as candy wraps, food wraps, gift wraps, soap wraps, who is conversant with aniline type printing. Good opportunity, salary up to $15,000. Address Box 52-372 care Paper Trade Journal. A-29

Assistant Supt., paper; Assistant Supt., pref. M.E., paperboard; Assistant Mgr., 28/35, converting; Chemist, expe. paper; Chemist, plastic coating exp.; Chemical Engineer, sales prom.; Colorist, coat., fancy papers, charge of Mix. Rm.; Mechanical Eng., plant eng. and maintenance, paper mill exp.; several Mechanical Engineers, degree or equivalent pract. exp.; Mechanical Engineers, several no exper. required; Superintendent, fine paper; Salesman, coarse papers (Texas) Several exper. Salesmen, paper, paper goods, stationery respectively; Tour Bosses, M.T., B.T. and Beater Engineers.

Other positions open.
PERSONNEL SERVICE ASSOC.,
115 State St., Springfield 3, Mass. A-29

WANTED

Man with technical and operating experience in the pulp and paper industry who would like to make writing a career; to fill a newly opened position of Associate Editor of Paper Trade Journal. Should be willing to travel, procure, write and edit articles dealing with production.

PAPER TRADE JOURNAL
15 West 47th St.
New York 36, N. Y.

HELP WANTED

MEN WANTED—POSITIONS OPEN

We can place—Gen. Supt. for large sulphite pulp and specialty paper mills; vice pres. and gen. mgr. Fourdrinier machine sulphite mill, able to buy pulp and take full charge of selling and mfg.; asst. to gen. mgr. paper converting mfg. plant, tablets, fillers, notebooks, stationery, envelopes, etc.; asst. supt. Cylinder and Fourdrinier machine mills; asst. to co-ordinator (West); pulp technologist.

Supervisor for maintenance and construction; power supervisors (2); expert engineer to dismantle, erect and set up Fourdrinier machine; development engineer for automatic machine development for paper converting plants; chemists, chemical engineers and laboratory men for mills, also for demonstrating and selling.

Designers and draftsmen; foreman prod. and sales converting plant (food packaging); office methods and procedure man; finish. foreman coated papers; color matcher; foreman paper converting plant, napkins and toilet paper; junior engineer for time studies and industrial engineering; salesmen for coarse papers, specialty papers and to sell special products to paper and pulp mills and converting plants; machine tenders and back tenders.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
Telephone Liberty 2-6547

SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES
A-29

PLANT ENGINEER

To coordinate activities of design engineering firm and contractors during construction. Direct all engineering and maintenance in completed mill. Should have not less than ten years experience in pulp and paper mill maintenance. Experience in maintenance of sulphate pulp production facilities necessary. Familiarity with groundwood and newsprint production desirable. Summarize experience. Box 52-274, Paper Trade Journal. TF

HELP WANTED

Starting our second machine. Need Machine Tenders, Back Tenders, Third Hands, and Beater Engineers. One straight Fourdrinier and One Yankee Fourdrinier. Manufacturing Wrappings, Specialties, Corrugating Medium, and Light Weight Chip. Best of Labor Relations, Insurance, and Liberal Pension Plan. Mill Located about 40 miles from Chicago, Ill.

PRAIRIE STATE PAPER MILLS
JOLIET, ILLINOIS PHONE 3-3441 OR WRITE
TF

MACHINE TENDER for cylinder machine making folding Box Board. Good pay, steady work and pleasant working conditions. Address Box 52-369 care Paper Trade Journal. S-5

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—75c a line. Minimum charge $3.75.

SITUATIONS WANTED—75c a line. Minimum charge $3.75. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—75c a line. Minimum charge $3.75.

WANTED—75c a line. Minimum charge $3.75.

OPPORTUNITIES—75c a line. Minimum charge $3.75.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional

Address replies to advertisements appearing under Box Number in care of
PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

TELEPHONE
HUMBOLDT 2-2177

CABLE ADDRESS: JACKROSS

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET
NEWARK 4, N. J.

CONVERTING
PAPER MAKING EQUIPMENT

NEW, USED, REBUILT
PAPER AND PULP MACHINERY

AGITATOR DRIVES
2—Cleveland enclosed—3 h.p. Ratio 24 to 1.
1—Foote Bros. enclosed—15 h.p. Ratio 33 to 1.

AIR HOIST
1—5-ton Ingersoll-Rand with Trolley.

BALERS
1—Economy Baler—20¼ x 24 x 49.
1—Economy Baler—18½ x 34 x 42¼.
1—Logeman Baler—27¼ x 47¼ x 62 with GE Motor and Controls.

BEATER FILLING
1—New 54" Beater Filling with ½" bars, woods and bed plate.

BLOWERS
1—Sturtevant Monogram Fan, Ball bearing, Size 7.
1—Sturtevant Multivane Fan, Ball bearing, Size 6.

CALENDER ROLLS
16—Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS
1—Farrel Birmingham, 5 roll, 108" Calender with doctors, 2 rolls bored for steam.
1—Black Clawson 90" 7 roll with 2 spare rolls.
1—Pusey & Jones 84" 5 roll, with doctors and drive.
1—88" 5-roll.

COATER
1—Waldron 42" 2 roll Coater. Will apply waxes, gums, lacquers, etc., on cellophane, paper or plastics. New 1946. Used 3 years.

"CYCLAFINER"
1—Shartle "Cyclafiner" with coupling.

CYLINDER MOLDS
1—134" face x 36" diameter, with stainless steel shafts.
1—77" face x 48" dia.—Stainless Steel Shaft.

DAMPENER
1—Valley Micromist Unit for water finish on paper—120" deckle.

DRIVES
1—#3 Reeves anti-friction bearing.
1—#6 Reeves anti-friction bearing with motor for adjustment.
1—Beloit enclosed drive right angle, ratio 3 to 1, with couplings and pulleys.
1—Falk enclosed drive, 100 H.P., ratio 5 to 1.
1—Link-Belt 40 h.p., ratio 2.2-1, 500 r.p.m.—227 r.p.m.
1—Cleveland enclosed drive right angle, 7 h.p., 24¼ to 1 ratio, 1750 r.p.m.

DRYERS
2—124" face x 48" diameter.
1—77" face x 48" diameter—with gear.
1—102" face x 48" diameter, with bearings.
3—110" face x 42" diameter, with bearings and gears.
1—109" face x 42" diameter Creping Dryer.
3—42" face x 36" diameter, with frames, gears and bearings.
39—46" face x 48" diameter, with gears, bearings and steam joints.
19—127" face x 42" diameter.
3—116" face x 48" diameter.
2—103" face x 48" diameter.
2—116" face x 36" diameter, with gears and bearings.
1—126" face x 48" diameter.
14—160" face x 48" diameter.
2—160" face x 36" diameter.
1—130" face x 48" diameter.
34—143" face x 48" diameter with frames, gears, bearings, steam joints, etc.
7—137" face x 48" diameter with frames, gears, bearings, steam joints, etc.
13—132" face x 48" diameter with frames, gears, bearings, steam joints, etc.
12—New Moore & White 68" face x 36" diameter, with frames, gears and bearings.

EXTRACTOR ROLLS
1—Downingtown Extractor Roll—128" face x 24" diameter. Anti-friction bearings.

FILTER PRESS
1—New Sperry 12" Filter Press—20 plate.

FILTERS
1—Oliver Vacuum Filter, 10' face x 5' 3" diameter. Steel vat.

FLAT SCREENS
3—8 plate Sandy Hill Roller Shoe with scrapers.
3—Bagley & Sewall 8 plate, with scrapers and plates.

FOURDRINIER SECTION
1—Pusey & Jones 156" x 80' Wire—Ball bearing. Complete from Voith Inlet to 22" diameter suction couch.

FOURDRINIER WIRES
3—New Lindsay 76" x 47 ft. 10"—60 mesh.

"HYDRAPULPER"
1—Shartle-Dilts 16' batch with hydraulic dump valve—cast iron tub.

HYDRAULIC PRESS
1—Thorpe 200 ton. Steam platens, 40" x 40" with pump.

JORDANS
1—#6 Miami, for motor drive.
1—Jones Majestic Stainless Steel Filling.
2—E. D. Jones Pony, 3/16" stainless steel fillings—banded plugs, spare new fillings.
1—Smith & Winchester Standard with granite fillings.

KNIFE GRINDER
1—100" Hanchett Knife Grinder with motor.

MOTORS
1—Allis Chalmers 30 h.p., 440 v., 660 r.p.m.
1—General Electric—25 h.p.—230 volts—3 ph. —60 cycle—300/900 r.p.m.
25 other 440 v. motors from 2 h.p. to 15 h.p.

PULP EQUIPMENT
2—APMEW Ball Bearing Pulp Screens—30 ton capacity—outward flow.
1—D. J. Murray 10' x 25' Barking Drum.

PULPERS
2—#2 Lannoye.

PUMPS
1—New Worthington—bronze filled, 10,000 g.p.m., 35' head, with extended base for motor—spare new impeller.
44—Centrifugal Pumps, open & closed impellers. Direct connected or Belt Driven. Extended base for motor. Assorted capacities and heads. Most used less than one year.

REELS
1—2 bowl 106"—18" diameter iron bowls.
1—2 bowl 94"—16" diameter bowls.

REFINER
1—Shartle Hydrafiner with coupling and new spare stainless steel filling.

ROLL GRINDER
1—Lobdell 18' Roll Grinder handles 26" maximum diameter rolls.

ROLLS—PRESS, COUCH, etc.
32—Press rolls, brass and rubber covered.
14—Couch rolls, brass and rubber covered.
250—Brass and steel carrying rolls.

ROTARY SCREENS
1—#2 Bird—Copper vat.

SAVEALL
1—Bird #5 with enclosed drive and 3 h.p. motor.

SCREW PRESSES
1—Valley Voith Screw Press, size 2.
1—Valley Voith Screw Press—enclosed drive.

SHEETERS
1—Hamblet 124" Duplex Sheeter with maxim layboy—8 roll backstand—motor and starter.
1—Moore & White Simplex 114" Sheeter with slitters—counter. Maxson layboy overlapping delivery. 8 roll backstand, motor and starter.

SHREDDERS
1—American 37" Hammermill, anti-friction bearing.
1—Jeffrey, 26¼" knives, 7 knife rotor, 6 knife bed plate. Ball bearing.

SLITTERS AND WINDERS
1—Beloit 125" Paper Machine Slitter and Rewinder—42" rewind.
1—Hudson Sharp 25W—66" Wax roll slitter and rewinder. New 1947.
2—Cameron 42", Model 6—24" rewind.
1—Cameron 44", Model 9-5.
1—Cameron 84"—Model 8—34" rewind—water cooled brake.

SMOOTHING PRESSES
2—New Farrel Birmingham 108" face x 24" diameter. Rubber covered, with ball bearings and enclosed drives.

STEAM TURBINES
1—De Laval 225 h.p. Initial pressure 140 p.s.i. Exhaust pressure 35 p.s.i. Complete with gear reducer.
1—De Laval Variable Speed—325 h.p. at 135 gauge and 30 p.s.i. exhaust. Complete with gear reducer.

STOCK PUMPS
1—Shartle 10 x 20 Single Plunger Pump.
2—Beloit 8 x 10 Triplex.
1—Triplex—8 x 10. Used less than 1 year.
2—Shartle Agi-flo, 13" suction, 14" and 4" discharge. Anti-friction bearings.
1—Beloit 10 x 20 Triplex.
1—Moore & White 10 x 16 Triplex.
1—Moore & White 8 x 8 Triplex.

SUCTION COUCH ROLLS
1—Millspaugh 36" diameter x 234" drilled face with enclosed drive, water cooled bearings, 12" suction boxes.

SUCTION FELT ROLL
1—New Downingtown 186" drilled face x 16" diameter, with anti friction bearings and stands.

SUCTION PRESS ROLLS
1—Sandusky 84" drilled face x 22" diameter, rebuilt.

TOILET TISSUE PERFORATOR
1—Paper Converting Machine Co. Model 141 automatic 81" Perforator, Slitter and Winder—with three motors—ball bearing.

TRANSMISSION ROPE
700 ft.—New 1¼" Hemp Rope.
700 ft.—New 1¼" Cotton Rope.

VACUUM PUMPS
2—Nash ½ H-5 Vacuum Pumps.
1—Nash K-4.

VOITH INLETS
2—Valley Iron Voith Inlets, adjustable 83" to 86"—brass lip, stainless steel apron.

VORTRAPS
15—4" Stainless Steel with rubber lined heads. 3" Hills McCanna Valves and stainless steel headers.

WRAPPING MACHINE
1—Morrow Stevens type 1C. Package thickness ¾" to 5". Used 30 days.

YANKEE DRYERS
1—Voith 100" face x 10" diameter—with bearings.

WHY LIST YOUR EQUIPMENT? — WE WILL BUY IT!

HELP WANTED

GENERAL ACCOUNTANT

Under general direction of comptroller, to supervise general accounting dept., maintain general ledger, develop financial statements, prepare all tax returns, and handle operating budgets. Should have college degree plus at least five years of accounting experience in paper industry. In reply summarize training and experience. Address—Bowaters Southern Paper Corporation, Calhoun, McMinn County, Tennessee. TF

MASTER MECHANIC for one machine board mill making folding grades. Good pay, pleasant working conditions. Address Box 52-368 care Paper Trade Journal. S-5

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 52-76 care Paper Trade Journal. TF

AN ASSISTANT to the Purchasing Agent of a medium sized paper mill in Wisconsin. A man between 32 and 40 years of age with five to ten years of purchasing experience is desired. The experience need not be in paper mill purchasing. Some administrative experience desirable and ability in this direction will be necessary. A complete resume should be submitted. Address Box 52-375 care Paper Trade Journal. S-5

SITUATIONS WANTED

Paper Converting—Paper Making

Experienced multi-plant operator; customer relations, complete manufacturing control, product design and/or product process engineering for the range of fine to coarse paper grades and finishes. Also paper converted items such as; business and social stationery envelopes, business forms, complete school supplies, varied book bindings, paper bags, disposable and multi-color printed tissues, transparent, foils and specialty paper wrappers, containers and dsiplay units. Address Box 52-358 care Paper Trade Journal. A-29

MECHANICAL ENGINEER

Graduate Engineer with 4 years experience, 2 years in paper industry dealing with paper mill improvements, desires new position with a future. Prefers Eastern location. Address Box 52-357 care Paper Trade Journal. A-29

SALESMAN with 35 years of selling to Jobbers and Convertors on Pacific Coast, would like to connect with a paper mill making printing papers. Address Box 52-356 care Paper Trade Journal. A-29

FOR SALE

FOR SALE

FOR SALE

1—16 Roll Supercalender Stack Manufactured by Norwood Engineering Co. Machine Number 2864F, 16 rolls of 7 paper and 9 steel, maximum web 62" drive—starting motor G. E. Induction #5384664 7½ H.P. 220 Volts, 3 phase F.L. Speed 690, 75 H.P. 8 extra paper rolls.

Bearings bronze, oiling-pump to top and drip gravity to others.

Pressure by Weights.

Speed-threading 50' per min.

If interested write care of Box No. 52-321, care Paper Trade Journal.

S-12

SITUATIONS WANTED

TECHNICAL DIRECTOR presently employed, would consider change offering more diversified use of experience with product development possibilities. Address Box 52-359 care Paper Trade Journal. A-29

YOUNG BEATER ENGINEER — Family man, capable of supervising, desires position of advancement. 13 years experience on Fourdrinier Specialty Machine running wide range of colors, grades and weights. Address Box 52-362 care Paper Trade Journal. S-12

MILL MANAGER desires change. Capable of taking full charge of operations as manager or equivalent executive position. Broad practical experience in manufacture of papers, medium quality boards, production of Kraft, sulphite and groundwood pulp and paper converting to bags, etc. Engineering graduate. Address Box 52-370 care Paper Trade Journal. S-12

FOR SALE

FOR SALE—1—132" face x 144" diameter Yankee Dryer. EMPLOYERS GROUP, 842 Ellicott Sq. Bldg., Buffalo, N. Y. A-29

WIRE STRIKE BOTHERING YOU?

WE OFFER IMMEDIATE DELIVERY

Fourdrinier wires, phos. bronze twill, 75/56 mesh, 90" x 60'.
1st Press Felts—Draper & Appleton, common Fourdrinier, 40' x 90".
2nd Press Felts—Albany & Orr fine press, 44' x 89".

W. A. JOHNSON

780 Frebis Avenue, Columbus, Ohio

A-29

WANTED — SURPLUS CHEMICALS — DYES — WAXES PLASTICIZERS — SOLVENTS PIGMENTS — OILS, etc.

CHEMICAL SERVICE CORPORATION

86-04 Beaver St., New York 5, N. Y.

A-29

FOR SALE—50,000 gallon capacity closed Redwood Water Tank. SEAMAN PAPER COMPANY, Otter River, Mass. TF

FOR SALE BELOIT IRON WORKS YANKEE DRYER AND SECONDARY DRYER SECTION

YANKEE; 12' dia. x 186" face with bearings, syphon, creping and cleaning doctors, J. O. Ross Hood, exhaust fan — water heating system and Midwest Fulton Dryer Drainage System with Thermo-Compressor. SECONDARY SECTION; 12 double-deck dryers and three felt dryers, 60" dia. x 175" face with bearings, syphons, cleaning doctors, felt rolls, felt stretcher, felt guide, enclosed chain drive, J. O. Ross Hood, exhaust fan—water heating system and Midwest Fulton Dryer Drainage System with thermo compressor. Designed and balanced for 1500 f.p.m. at 75# steam pressure. All new and installed in 1941. Excellent condition—for immediate delivery—blueprints available. May be seen in operation at The Diamond Match Co., Plattsburg, New York. Offered by Gibbs-Brower Co., Inc., 21 East 40th Street, New York 16, N. Y. A-29

FOR SALE

CAMERON SLITTERS

1—62″ Type 26-3A Duplex
1—52″ Type 8-5
1—42″ and 1—62″ Type 6.
1—42″ Type 40-2A
1—42″ and 1—62″ Type 40-1-AF
1—86″ Type 10.
1—72″ and 1—86″ Type 8-10.
1—112″ Type 18

OTHER SLITTERS

1—62″ Beck Duplex Rewind Razor Blade Slitter and Rewinder, Suitable for paper and plastics
1—40″ Kidder Model SL, Shear-cut.
1—30″ Meisel Series OP, Shear-cut.
1—30″, 1—40″ and 1—62″ Langston Type A Shear Cut
1—42″ Kidder Merchant Model Shear Cut Pneumatic control
1—40″ Type C Fales, shear-cut
1—84″ Langston B.A. Shear Cut.
1—94″ Beloit, heavy duty Paper Machine Winder
1—86″ Wolverine Double-drum Surface Rewinder. Rewinds 60″ diameter rolls.

POWER PAPER CUTTERS

11—Seybold, Special offer, practically new, latest type, 50″ C.F. Model "Sixty"; 50″, 56″ and 65″ 10Z; 56″ 8Z; 44″ 6Z; 39″, 44″ and 62″ 20th Century; 44″, 48″ and 55″ Holyoke.
4—Oswegos, 38″, 44″, 50″ and 74″
1—54″ Sheridan
2—Dexter, 38″ and 50″
4—Acme, 32″, 34″, 36″ and 50″
1—30½″ Diamond
3—Smith & Winchester Undercut, 63″, 69″ and 84″.
1—36″ "Perfecta" with attachments to shred paper from ½″ wide up.

MISCELLANEOUS MACHINES

Die Presses—
1—Seybold 24″ x 38″ U.A. Model
4—Sheridans, 18″ x 33″, 19″ x 45″, 22″ x 60″, 44″ x 22″
1—Sheridan Continuous feed embosser Model 8B Platen 33″ x 46″.
1—40″ Flocking machine
1—36″ Champlain-Chambon two unit rotogravure press. With Shartle-Miami Waxing Machine. Turning bars and PIV Drive. Roll to roll.
1—30″ Bagprint 3 color Aniline Printing Press. Roll to Roll.
1—12″ and 1—24″ Schultz Automatic Shelf and Wax roll machine. Rewind 25′ to 250′.
1—72″ Hudson-Sharp 25W Winder for Waxed and Household power rolls.
1—36″ Beck Sheeter with electric eye and Layboy
1—34″ Waldron Gummed Paper Breaker
1—46″ Perkins Embossing machine
1—P.C. M Co.'s high speed 3 web napkin folder Model 1061, with embossing attachment.
1—48″ Max Kroenerd" German Embosser with double drum rewind
1—48″ Mayer Equalizer Waxing Machine Type 40-EV. Two Coating Heads and three 16″ diameter Cooling Drums.
1—14″ wide experimental waxing machine, complete.
1—52″ and 1—72″ Hamblet Single Rotary Sheet Cutters.
1—94″ Moore & White Duplex Rotary Sheet Cutter.
1—84″ Hamblet Single Sheeter with M&W Layboy and Backstands.
1—72″ Finlay Rotary Sheet Cutter with Erie Layboy and backstands.
2—Asphalt Laminating machines, one 70″ and one 88″.
1—84″ 9-roll Holyoke Stack of Super Calenders.
1—66″ 9-roll Norwood Stack of Super Calenders.
1—62″ x 60″ Dilts Iron Tub High Speed Bandless Beater.
1—70″ x 48″ Jones Stainless Steel High Speed Beater.
1—Weber #5AG SOS Bag Machine range 5 to 16 pounds.
1—Nasko Flat and Square Bag machine.
1—Smith & Winchester ½ barrel Bottomer.
1—81″ Paper Converting Machine Co.'s triple shaft toilet and towel converter complete with 81″ chrome plated embossing roll.
3—Dilts 1000# Iron Tub Beaters. Rolls 48″ x 48″.

We Want Your Used Equipment—
Write Us *NOW*

GIBBS-BROWER CO. INC.
Please address reply to Room 902
21 E. 40th Street, New York 16, N.Y.
Telephone Lexington 2-5759
A-29

FOR SALE

FOR SALE
42″ Camachine No. 6.
48″ Kidder model CH Slitter.
72″ Cameron 8-10 Slitter.
50″ Hamblet Sheeter, with Back-stand.
110″ Dillon Sheeter, with Back-stand.
THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE—1—Swenson triple effect Evaporator, copper horiz. tube, total h.s. 1320 sq. ft. with piping, supporting steel, condenser, pumps, etc.; 1—Tolhurst 40″ monel basket Centrifugal, 2 speed AC motor; 3 Oliver Filters, up to 8′ x 12′. Send us your inquiries. CONSOLIDATED PRODUCTS CO., INC., 15-18 Park Row, New York 38, N. Y. BArclay 7-0600. TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—64″ Seybold 10-Z Automatic Clamp Cutter with Power Back Gauge. In very fine condition. Address Box 52-367 care Paper Trade Journal. A-29

FOR SALE—1 Machine Mill—100″ straight Fourdrinier—48″ driers. Located in East. Good water and considerable bldg. space on a tract of 5 acres of ground. Address Box 52-365 care Paper Trade Journal. A-29

MACHINE TOOLS FOR SALE
#45 G & L Horizontal Boring Mill
6′ American Radial Drill
72″ x 20 Lathe
63½″ x 54″ x 12′ Powell Planer, 4 Head, Reversing Motor Drive
10 ton Yard Derrick, Gasoline Engine Drive
6 Electric Welders, 200 to 500 Amp.
All of the above may be inspected in operation.
C. H. Wheeler Manufacturing Co.
Lehigh & Sedgley Ave., Phila. 32, Pa.
A-29

FOR SALE—Two (2) Dietz Toilet Paper Converting Machines for 81″ rolls, regular type for either toilet towel or pleating; complete with motor, drives, bars, etc. Address Box 52-371 care Paper Trade Journal. TF

FOR SALE
DRYER SECTION
34—143″ face x 48″ diameter.
7—137″ face x 48″ diameter.
13—132″ face x 48″ diameter.
All are complete with 2 deck frames, gears, bearings, steam joints.
In operation at 700 ft. per minute.
ROSS PAPER MACHINERY COMPANY
265 Passaic Street Newark, N. J.
Tel. HUmboldt 2-2177 A-29

WANTED

WANTED TO BUY—new or used equipment for making Kraft gum tape. Write Box 52-374 care Paper Trade Journal. A-29

WANTED

WANTED—One 10 x 10 Ames Twin Variable Speed paper mill engine and one 66″ calender stack. Address Box 52-355 care Paper Trade Journal. S-5

WANTED—1—100″ (approx.) Cameron Slitter; 1—60″ to 84″ Cameron; 1—40″ to 60″ Cameron, Single or double rewind. Address Box 52-376 care Paper Trade Journal. A-29

FOR RENT

FOR RENT
LONG TERM LEASE
One Machine Cylinder Tissue Mill equipped to produce all grades of specialty paper including Kraft Twisting. Principals only.
Kelly-Forsyth Corporation
Ithaca, New York S-5

GOVERNMENT BIDS

PROPOSALS

FOR FURNISHING

PAPER FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m, September 16, 1952, E. D. S. T., in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper for the use of the Government departments and establishments in the District of Columbia for the term of three months, beginning October 1, 1952; deliveries to be f. o. b. Government Printing Office Warehouse, or Warehouse Siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposal. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedules, and specifications may be obtained by addressing John J. Deviny, Public Printer, Washington 25, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 15 of the instructions.

The approximate estimated quantities set forth in detail in the schedule comprise:

PAPER

1,000,000 pounds newsprint paper; 1,860,000 pounds machine-finish book paper; 180,000 pounds english-finish book paper; 5,640,000 pounds offset book paper; 270,000 pounds antique book paper; 370,000 pounds water-resistant (text) book paper; 775,000 pounds supercalendered book paper; 2,450,000 pounds coated book paper; 1,610,000 pounds mimeograph paper; 505,000 pounds duplicator copy paper; 9,055,000 pounds writing paper; 1,083,900 pounds map paper; 440,000 pounds manifold paper; 2,510,500 pounds bond paper; 835,000 pounds ledger paper; 800,000 pounds index paper; 280,000 pounds cover paper; 230,000 pounds manila paper; 190,000 pounds kraft paper; 500,000 sheets gummed paper; 30,000 pounds blotting paper; 5,000 pounds high-finish red wallet board; 100,000 pounds tag board; 25,000 pounds manila cardboard; 20,000 sheets litho-coated cardboard; 60,000 sheets railroad board; 265,000 pounds wood cardboard; 200,000 pounds tan board; 2,045,000 pounds postal card paper; 10,000 pounds folding bristol board; 55,000 sheets pressboard; 275,000 pounds newsboard; 265,000 {pounds binder's board. {pounds chestnut cover board.

By direction of the Joint Committee on Printing.

JOHN J. DEVINY,
Public Printer.

WASHINGTON, D. C.,
August 18, 1952. S-5

BUY UNITED STATES DEFENSE BONDS

WHERE TO BUY

ABRASIVES
Norton Co.
Simonds Abrasive Co.

ADHESIVES
American Cyanamid Company Plastics & Resins Division
Diamond Alkali Co.
The Dow Chemical Co.
E. I. du Pont de Nemours & Co., Inc.
B. F. Goodrich Co.
The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
Morningstar, Nichol, Inc.
National Starch Products, Inc.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.
Rice Barton Corporation

AGITATORS
Apmew, Inc.
Appleton Machine Co.
Biggs Boiler Works Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
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Black Clawson Company
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The Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
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Timken Roller Bearing Co.
The Torrington Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

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Cowles Company

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Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Hermann Mfg. Co.
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Morden Machines Co.
The Noble & Wood Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
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Lukenweld Div., Lukens Steel Co.
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Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Graton & Knight Inc.
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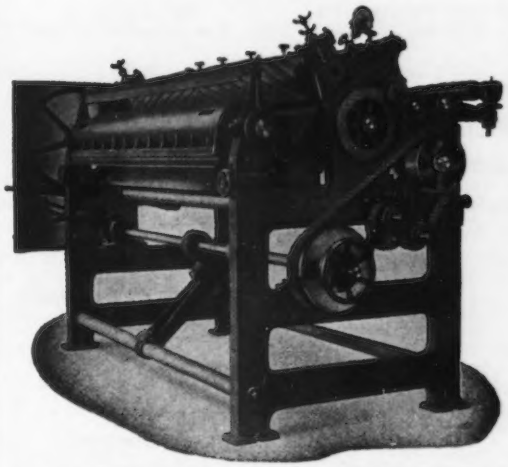

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Monsanto Chemical Company
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Potdevin Machine Co.
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Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

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The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
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Wyandotte Chemicals Corp., Michigan Alkali Div.

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Poirier Control Co.
Shartle Bros. Mch. Co.
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John Waldron Corp.
Dilts Machine Works

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Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

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Whiting Corp.

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CYLINDER WIRES
Hayden Wire Works Inc.

DAMPENERS
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Plank Company

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Williams-Gray Co.

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Hercules Powder Co., Inc.

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General Dyestuff Corp.
Kinsley Chemical Co.
Rice Barton Research Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.

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DENSOMETERS
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General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
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General Dyestuff Corp.
Nopco Chemical Co.

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Biggs Boiler Works Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lukenweld
Pandia, Inc.
Paper & Industrial Appliances
Pusey & Jones Corp.

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General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
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Biggs Boiler Works Co.
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Lukenweld
The Moore & White Co.
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J. J. Ross Company
Red-Ray Mfg. Co., Inc.
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Shartle Brothers Machine Co.
Valley Iron Works Co.

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Beloit Iron Works
Bird Machine Co.
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Downingtown Mfg. Co.
Farrel-Birmingham Co.
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General Electric Company
Gibbs-Brower Company, Inc.
Manchester Machine Co.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Valley Iron Works Co.

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Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Shartle Brothers Machine Co.
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Westinghouse Electric Corp.
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Beloit Iron Works
Black-Clawson Co.
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
Rice Barton Corporation
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The Sandy Hill Iron & Brass Works
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The Noble & Wood Machine Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KILNS
F. L. Smidth

KNIVES
Black Clawson Company
Bolton & Sons, Inc.
Dilts Machine Works, Inc.
Dusenbery Co., Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
The Moore & White Co.
The Noble & Wood Machine Co.
Simonds Saw & Steel Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOTTERS
Black-Clawson Co.
Improved Paper Machinery Corp.

LABORATORY CORRUGATOR
The Noble & Wood Machine Co.
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LINTER COTTON
Hercules Powder Co., Inc.
Railway Supply & Mfg. Co.

LINTER PULP
Hercules Powder Co., Inc.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
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Jeffrey Mfg. Co.
Shartle Bros. Mch. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Testing Machines, Inc.

MIXERS
Bailey & Co., Inc.

MICRO-CRYSTALLINE WAXES
Bareco Oil Co.
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Williams Apparatus Co., Inc.

MOISTURE METERS
Hart-Moisture-Meters

MOTORS
Elliott Company

MOTORS AND GENERATORS
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General Electric Company
Reliance Electric & Engrg. Co.
Westinghouse Electric Corp.

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The International Nickel Co.

NOZZLES
Spray Engrg. Co.

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Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Beloit Iron Works
Black-Clawson Co.
Manchester Machine Co.
Rice Barton Corporation
Westinghouse Electric Corp.

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Manchester Machine Co.
Moore & White Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINES—LABORATORY
The Noble & Wood Machine Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Sun Oil Company

PARAFFIN WAX EMULSIONS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.
Nopco Chemical Co.

PASTING MACHINES
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Black Clawson Company
Dilts Machine Wks.
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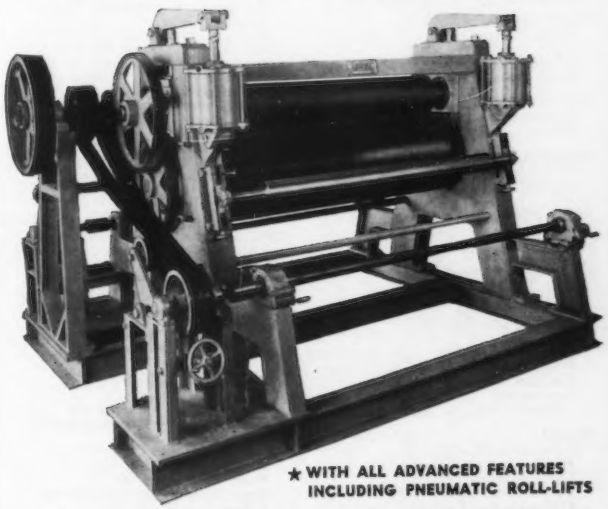

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Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

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Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
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PLASTICIZERS
American Cyanamid Company, Industrial Chemicals Division
Aktivin Division. Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Rohm & Haas Co.

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Perkins & Son, Inc., B. F.

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Babcock & Wilcox Co.
Lukenweld Division
Lukens Steel Company
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Timken Roller Bearing Co.

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The Noble & Wood Machine Co.
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Goodrich, B. F., Company, Inc.
Manchester Machine Co.
Rice Barton Corporation

PRESSURE FILTERS
Holyoke Machine Co.

PRESSURE VESSELS
Biggs Boiler Works Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

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Beloit Iron Works
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
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Manchester Machine Co.
The Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
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Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

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Dodge Mfg. Corp.
Rice Barton Corporation

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Grinnell Company
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Shartle Brothers Machine Co.

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Bauer Brothers Co.
Cowles Company
Dilts Machine Works
E. D. Jones & Sons Co.
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Morden Machines Co.
The Noble & Wood Machine Co.
Rice Barton Research Corp.
Shartle Brothers Machine Co.

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Gottesman & Co., Inc.
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Nordicus, Inc.
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.
Restigouche Co., Ltd.

PULP SCREENS
Bird Machine Co.
Trimbey Machine Works

PULPSTONES
Norton Company

PULP TESTERS
Williams Apparatus Co., Inc.

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Combustion Engineering-Superheater, Inc.
Jeffrey Mfg. Co.
F. L. Smith & Co.

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Black Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
The Noble & Wood Machine Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Co.

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Red-Ray Mfg. Co., Inc.

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General Dyestuff Corp.
Rohm & Haas Co.

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B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

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Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

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Beloit Iron Works
Black Clawson Company
Dilts Machine Works (Kohler Systems)
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Downingtown Mfg. Co.
Hudson-Sharp Mch. Co.
Manchester Machine Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.
Waldron, John, Corp.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
The Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout Waldron & Co., Inc.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Apmew, Inc.
Bird Machine Company
General Electric Co.
Improved Paper Machinery Corp.
Johnson Corp.
Meyer Governor Co.
Shartle Brothers Machine Co.
Taylor Instrument Companies
Trimbey Machine Works
Westinghouse Electric Corp.

RESINS
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The Dow Chemical Company
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co., Resinous Products Div.

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Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
B. F. Goodrich Co.
Holyoke Machine Co.
Lindsay Wire Weaving Co.
Lobdell United Co.
Manchester Machine Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
The Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Rice Barton Corporation
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Stowe-Woodward Inc.
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John
Wheeler Roll Co.

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The Goodyear Tire & Rubber Company

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Dilts Machine Works (Kohler Systems)
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Johnstone Engrg. & Mch. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc.

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Lawton Company

ROPE CARRIERS
Black Clawson Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

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Biggs Boiler Works Co.
F. L. Smidth & Co.

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The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

RUBBER LINING
B. F. Goodrich Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SALT CAKE
Ethyl Corporation

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B. F. Goodrich Chemical Co.

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Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
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Chicago Bridge & Iron Co.
Improved Paper Machinery Corp.

SAWS
Simonds Saw & Steel Co.

SCALES
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.
Union Screen Plate Co.

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Appleton Machine Company
The Bagley & Sewall Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Trimbey Machine Works
Valley Iron Works Co.

SHAKE STICKS
Westinghouse Electric Corp.

SHEET MACHINES
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Thomas W. Hall Co.
Hermann Mfg. Co.
Valley Iron Works Co.
Williams Apparatus Co., Inc.

SHEET MACHINES—LABORATORY
The Noble & Wood Machine Co.

SHEETERS
Jagenberg-Werke Akt. Ges.

SHOWER PIPES
Bird Machine Company
Black-Clawson Co.
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.
Jeffrey Mfg. Co.

SILO STORAGE
Marietta Concrete Corp.

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Black-Clawson Co.
Manchester Machine Co.
Rice Barton Corporation

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American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

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Buckman Laboratories of Canada, Ltd.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Magnuson Products Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SLITTERS
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Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Clark-Aiken Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Dusenbery Co., Inc.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Graphic Arts International Corp.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson-Sharp Mch. Co.
Improved Paper Machinery Corp.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuffs Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Biggs Boiler Works Co.
Dilts Machine Works
Egan, Frank W., & Co.
Manchester Machine Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPEED REDUCERS
Dodge Mfg. Corp.

SPLICING TISSUE
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall

STEAM JOINTS
The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Johnson Corp.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
The Biggs Boiler Works Co.
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STOKERS
Detroit Stoker Co.

STORAGE BIN
Marietta Concrete Corp.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOX COVERS
Westinghouse Electric Corp.

SUCTION BOXES
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Son Co.
Manchester Machine Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION ROLLS
Beloit Iron Works
Manchester Machine Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company, Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS
The Appelton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.

SYNTHETIC RESINS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.
Rohm & Haas Co.

SYPHONS
Cram & Associates

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
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Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Sons, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stebbins Engrg. Co.

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Testing Machines, Inc.

TENSILE TESTERS
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Scott Testers Inc.
Testing Machines, Inc.
A. van der Korput

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Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIRES
Stroh Process Steel Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

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Towmotor Corp.

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Jeffrey Mfg. Co.
Lovejoy Flexible Coupling Co.
More Chain Co.

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Grinnell Company
Johnson Corporation
Shartle Bros. Mch. Co.

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F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Biggs Boiler Works Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
De Laval Steam Turbine Co.
General Electric Company
Westinghouse Electric Corp.

UNWINDERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Co.
Shartle Brothers Machine Co.

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Dodge Mfg. Corp.
Goodrich, B. F., Company, Inc.

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The Bagley & Sewall Company
Crane Company
DeZurick Shower Co.
Dilts Machine Works
Fabri Valve Co. of America
Grinnell Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
The Noble & Wood Machine Co.
William Powell Co.
Record Fdy. & Mch. Co.
Rice Barton Research Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Walworth Company

VATS
Biggs Boiler Works Co.
Black-Clawson Co.
Beloit Iron Works
Rice Barton Corporation

WASHERS
The Bagley & Sewall Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Moore & White Co.
The Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
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Jeffrey Mfg. Co.

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Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.
The Permutit Company
The Sandy Hill Iron & Brass Works

WATER DISPERSIONS
American Cyanamid Company Industrial Chemicals Division
Naugatuck Chemical Division of U. S. Rubber Co.
Rohm & Haas Co., Resinous Products Div.

WATER FILTERS
Bird Machine Co.
Holyoke Machine Co.
Improved Paper Machinery Corp.

WATER FINISH EQUIPMENT
The Permutit Company

WATER PENETRATION TESTER
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

WATER SOFTENERS
Hungerford & Terry, Inc.
Wyandotte Chemicals Corp. Michigan Alkali Div.

WATER TREATMENT
Dorr Company

WATER VAPOR CUPS
Thwing-Albert Instrument Co.

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Black Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
John Waldron Corp.

WELDING EQUIPMENT
General Electric Company
Walworth Company
Westinghouse Electric Corp.

WET MACHINES
The Bagley & Sewall Company
Black Clawson Company
Carthage Machine Co.
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
Moore & White Co.
The Noble & Wood Machine Co.
Pusey & Jones Company
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WET STRENGTHENING AGENTS
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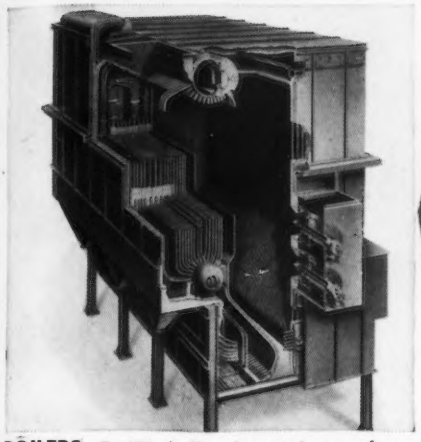

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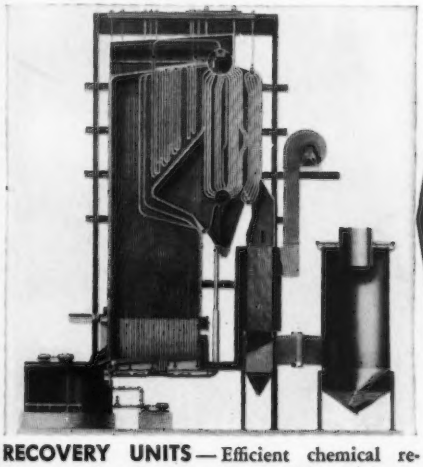

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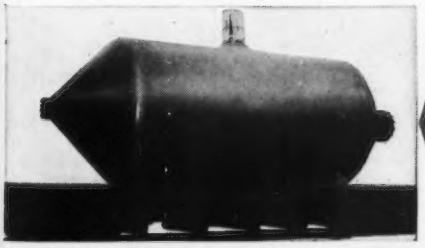

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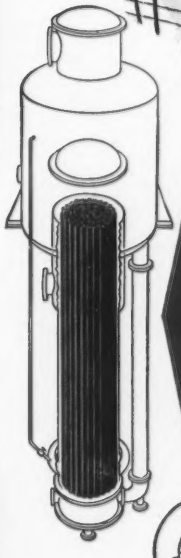

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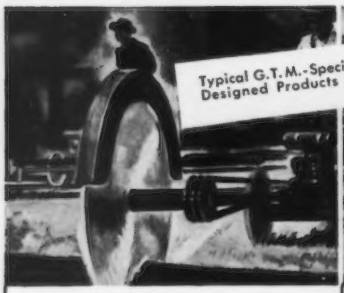

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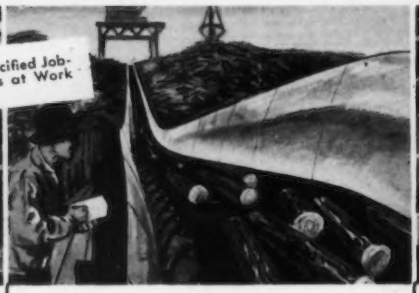

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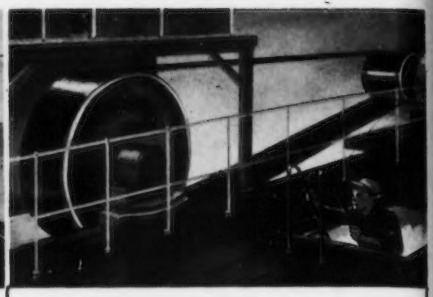

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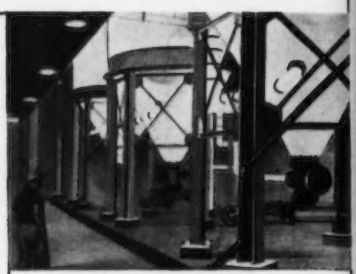

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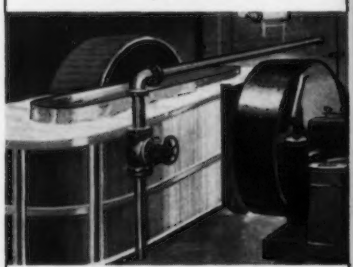

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